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Environmental Appeal Board

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DECISION NOs. 2007-EMA-007(a); 2008-EMA-005(a)

In the matter of two appeals under section 100 of the *Environmental Management Act*, S.B.C. 2003, c. 53.

BETWEEN:	West Coast Reduction Ltd.	**APPELLANT**
AND:	District Director of the Greater Vancouver Regional District	**RESPONDENT**
AND:	Don Dickson, Brenda Belak, Sheila Craigie and Blair Redlin	**THIRD PARTIES**
BEFORE:	A Panel of the Environmental Appeal Board Alan Andison, Chair Monica Danon-Schaffer, Member Robert Wickett, Member	
DATES:	May 5-9, July 7, 10, 21-22, and September 3-5, 2008	
PLACE:	Vancouver, BC	
APPEARING:	For the Appellant: Gary Letcher, Counsel Andrea Akelaitis, Counsel Daniela Fisher, Counsel For the Respondent: R.H. Robb For the Third Parties: Mark Haddock, Counsel Rachel Forbes, Articled Student	

APPEALS

[1] West Coast Reduction Ltd. ("West Coast") appeals two decisions of R.H. (Ray) Robb, Air Quality District Director (the "District Director") with the Greater Vancouver Regional District (the "GVRD")[1]: the first decision is dated June 18, 2007 (Appeal No. 2007-EMA-007); the second decision is dated March 14, 2008 (Appeal No. 2008-EMA-005).

[1] The GVRD is now referred to as Metro Vancouver but its legal name remains the GVRD. For the purposes of this decision, its legal name will be used.

[2] Both decisions were to amend West Coast's existing air permit no. GVA 0141, which authorizes the release of air contaminants from West Coast's rendering plant located at 105 North Commercial Drive, in Vancouver, British Columbia.

[3] The amendments add various requirements, conditions, criteria, standards, guidelines and objectives to West Coast's permit, with the ultimate objective of reducing the amount of rendering plant odour experienced in the local community. Of particular relevance to these appeals, the District Director placed limits on the concentration of odour that can be discharged from the plant as measured in "odour units", and requires monthly odour testing and reporting to determine whether those concentration limits are being met.

[4] The District Director also required West Coast to develop a comprehensive odour control action plan, perform periodic dispersion modelling, and develop a plan for odour management on weekends and holidays in the summer months.

[5] The District Director made these amendments on his own initiative pursuant to the Environmental Management Act, S.B.C. 2003, c. 53, and the GVRD's Air Quality Management Bylaw No. 937, 1999 (the "GVRD Bylaw"). In particular, he cites section 4.4 of the GVRD Bylaw (worded similarly to section 16(1) of the Act) as authority for the amendments. This section provides as follows:

Amendment of Permits and Approvals

4.4 Subject to section 4.5, the District Director may

> (a) on the District Director's own initiative where on reasonable grounds the District Director considers it necessary for the protection of the Environment; or
>
> (b) on written application by the Permittee;
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> amend the requirements of a Permit or Approval by changing or imposing any procedure or requirement that was imposed or could have been imposed under section 4.1. [emphasis added]

[6] West Coast appeals these amendments on the grounds that they are unreasonable, arbitrary, and were made without proper authority. In particular, it maintains that the District Director does not have jurisdiction to order the amendments on his own initiative as he did not have "reasonable grounds" to find that they were "necessary for the protection of the environment". It submits that the amendments were ordered solely on the basis of community complaints, and that this is unreasonable in the circumstances.

[7] West Coast further argues that the amendment decisions are wrong because the District Director imposed a new unit of measurement into British Columbia (odour units) without a considered process, or anything that can be recognized as a process. West Coast submits that odour units cannot, and should not be used in a permit for compliance and enforcement purposes given their subjective nature and their shortcomings with respect to accuracy and precision.

[8] West Coast also argues that the plan for odour management on summer weekends and holidays is not practical and would actually exacerbate odour and undermine sustainability. West Coast submits that its rendering facility provides a

significant benefit to the Province and that this should have been given more weight in the District Director's analysis.

[9] West Coast asks the Board to set aside the amendments pursuant to its powers under section 103 of the *Environmental Management Act*. Section 103 of the *Act* gives the Board the power to confirm, reverse or vary the decision being appealed, send the matter back to the person who made the decision, or make any decision the person whose decision is appealed could have made and that the Board considers appropriate in the circumstances.

[10] In addition to the appeals by West Coast, the Board also received appeals against both amendments by Don Dickson, Brenda Belak, Sheila Craigie and Blair Redlin who are residents of Vancouver living in neighbourhoods to the south and southeast of the facility. This area is known as the Grandview-Woodland area.

[11] These residents appeal the District Director's decisions for different reasons. They argue that the amendments do not go far enough to reduce the odours emitted from West Coast's plant, and ask the Board to send the decisions back to the District Director to further restrict the emission of odours. The resident appellants have been added as Third Parties in West Coast's appeals, and West Coast has been added as a Third Party in their appeals.

[12] Given the overlapping nature of the appeals by West Coast and the resident appellants, the Board heard the appeals together. However, the Board has decided the merits of their respective appeals in separate, but companion, decisions. The Board's decision on the resident appellants' appeals has been released concurrently with this decision (see *Dickson et al., v. District Director*, Decision Nos. 2007-EMA-008(b) and 2008-EMA-004(b)).

BACKGROUND

[13] The following background information is taken from the testimony and documents provided to the Panel and, except where stated, is not in dispute.

The Facility

[14] The rendering plant was constructed in 1964 on North Commercial Drive, in an industrial area of Vancouver. It is on land adjacent to Burrard Inlet, and is situated near other industrial operations including a sewage pump station, an autobody refinisher, meat packers and fish processors. The evidence is that this is one of the last major industrial areas in Vancouver.

[15] Rendering is the manufacturing and cooking process used to convert raw materials into finished products. In this case, the raw materials are animal by-products (poultry, pork and fish) which are rendered into useable finished products; namely, protein meals and refined animal fats such as poultry meal, fish meal, porcine meal, feather meal, blood meal, fish oil and tallow. These finished products are then used in a multitude of animal feed and pet food products. West Coast describes this as the "recycling" of waste materials into a useable product.

[16] West Coast's facility also collects used cooking oil from thousands of restaurants in the Lower Mainland and refines it into a useable finished product.

[17] On average, the rendering plant currently collects and recycles 1.6 million pounds of animal by-products per day from poultry, pork and fish processors in the Province. Approximately 25,000 to 50,000 pounds of raw material are transported from suppliers in customized trucks at a time. To process this volume, the facility operates 24 hours per day, approximately six days a week (typically commencing mid-Monday and ending on Saturday afternoon or evening), and operates 24 hours per day, seven days a week during the fish processing season from May to September.

[18] West Coast currently has 3,000 suppliers in the Lower Mainland which include farms, feedlots, hog barns, poultry barns, slaughterhouses, fish processors, secondary food manufactures, supermarkets, butcher shops and restaurants.

Rendering Plant Odour

[19] There is no dispute that the amendments were made in direct response to an increase in public complaints about the odour from West Coast's facility. Depending on the wind and weather conditions, odours from the industrial area in general, and from West Coast's plant in particular, can travel to the nearby residential areas. Some of those neighbourhoods were established in the early 1900s.

[20] West Coast has made significant efforts over the years, and spent millions of dollars, to reduce its odour emissions. Some of those efforts will be described later in this decision. However, despite West Coast's efforts, both the GVRD and West Coast continue to receive complaints about unpleasant odours emanating from the facility, particularly during the warmer months of the year.

[21] The rendering process takes place in enclosed, computer-controlled processing systems. Odours generated during the rendering process are currently controlled by multistage scrubbers and two thermal oxidizers. There are five stacks which produce the main emissions of concern in these appeals; three wet scrubbers and two incinerators.

[22] For the most part, the odours complained of come from the rendering process itself, although some may also come from the raw materials when they are received at the plant. The rendering process was described in a June 18, 2007, memorandum from Don Miller, a senior officer in the Air Quality Control Division of the GVRD, to Mr. Robb, the District Director:

> The company receives animal byproducts from the poultry, fish, sheep and pig processing industries, as well as a significant amount of spent cooking oil and grease from the food services sector. Cattle byproducts are segregated from these waste streams and sent to Alberta for processing to prevent any possibility of spreading BSE (mad cow disease).
>
> These [animal] byproducts (which include blood and feathers) are processed through what amounts to a giant meat grinder, then cooked at high temperatures to sterilize the product and release fats and water vapour. Off-gases from the cooking process are passed through condensers to remove water and condensable gases, and the remaining gas streams are passed through a thermal oxidizer to destroy odours. The residual solids, fats and oils are separated in a centrifuge and further processed into marketable

products such as protein meals and tallow. Room air from the raw material receiving area and the cooking areas are treated in a series of wet scrubbers to remove odours before discharge to the atmosphere.

[23] In general, the odour control strategy employed by West Coast is to incinerate high intensity odours (the odours emitted during the actual rendering process). There are over 200 points throughout the plant where these high intensity odours are "pulled off" various pieces of equipment, which then travel through pipes, and are treated in the thermal oxidizers. West Coast also maintains negative pressure in all of the processing and raw material handling areas. Negative pressure is important to control "fugitive emissions". Fugitive emissions are emissions that will escape when a door or window is opened. Negative pressure is required to "pull the air into the room".

[24] Lower intensity odours come from the air in the buildings where rendering takes place. These odours are ducted to a series of wet scrubbers utilizing sodium hypochlorite and/or ozone as the oxidizing agent to destroy odours. The scrubbers are also used to maintain negative pressure in the building to address any incidental odours coming off of the equipment.

[25] In addition, there is continual "housekeeping" performed at the plant to clean areas and keep doors closed.

[26] In the receiving area, trucks back into a building and deposit their contents into large steel vessels (receiving pits). All of these pits, except for two, are indoors. The two outdoor pits have lids and a suction mechanism to direct odour to the scrubbers and to maintain negative pressure on those pits.

[27] For purposes of product quality and odour control, the raw material goes into the rendering process as quickly as possible, with the upper limit being one hour after delivery. The timing depends on how much other material arrived previously. The trucks bringing in the raw material are not refrigerated.

[28] In the event of a plant upset or an equipment malfunction there are certain procedures in place, which include notifying the GVRD.

Geographic Area Affected by Emissions from West Coast's Facility

[29] Since it began operating in 1964, the odour reducing technologies and procedures implemented by West Coast have significantly reduced the geographic area impacted by its odour. This was conveniently depicted in an overlay created by the District Director, which shows that the area of potential impact has gone from approximately 12 square kilometers to approximately three square kilometers.

[30] The odour control technologies and procedures that contributed to this reduction, and implemented prior to the amendments at issue, are as follows:

1964 When the plant opened, the only odour control was a simple flame in a vent pipe.

1970 The first low intensity packed tower scrubber was installed.

1974 The first high intensity scrubber was installed to treat process odours.

1978 A combination venture and packed tower scrubber was installed in the fats and oils processing area.

1982 A multi-stage high intensity scrubber and four low intensity scrubbers were installed in a new fish rendering process.

1985 A second multi-stage high intensity scrubber was installed in the feather processing area.

1992 A new solid state process control system was installed to control and monitor the scrubbers.

1993 The first thermal oxidizer was installed.

2000 The control system was upgraded to a computer-based operator interface.

2004 The original 1970 scrubber was replaced by a new, more efficient unit.

2005 Controls were again upgraded with enhanced monitoring capabilities.

2006 The capacity of the existing thermal oxidizer was optimized and a new regenerative thermal oxidizer and a new ozone generating system were installed.

[31] Further improvements have been made since the amendments and will be discussed later in the decision.

[32] The evidence before the Panel is that there are now approximately 22,000 households, representing approximately 30,000 people, in the area potentially impacted by odour from West Coast's plant. The area impacted is generally within the confines of Nanaimo Street to the east, Clark Drive to the west and East 1st Avenue to south.

GVRD's Authority to Regulate Air Quality

[33] In British Columbia, the *Environmental Management Act* is the provincial legislation that regulates the discharge of waste into the environment, including the discharge of air contaminants.

[34] For the regulation of air contaminants within the GVRD, the *Act* states:

Control of air contaminants in Greater Vancouver

31 (1) Despite anything in its letters patent, the Greater Vancouver Regional District may provide the service of air pollution control and air quality management and, for that purpose, the board of the regional district may, by bylaw, prohibit, regulate and otherwise control and prevent the discharge of air contaminants.

[35] In *Greater Vancouver (Regional District) v. Darvonda Nurseries Ltd.*, 2008 B.C.S.C. 1251, the B.C. Supreme Court explained the effect of this provision:

> 20. The effect of the opening words … was to give the GVRD the authority to legislate concerning air quality even in areas formerly reserved to the province under the Letters Patent.

[36] The GVRD has regulated air quality within its boundaries since 1972.

[37] The GVRD *Bylaw* cited in these appeals (*Air Quality Management Bylaw No. 937*) was adopted in 1999. Of note, many of the provisions of the *Bylaw* are almost identical to those in the Act, with differences mainly in the numbering, capitalization and some relatively minor word changes. This is the case with the definition of air contaminant, the general prohibition section, the permitting section and the permit amendment section of the *Bylaw*, referred to below.

[38] Air contaminant is defined in section 1.1 of the *Bylaw*:

> "Air Contaminant" means any substance that is emitted into the Air and that
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> (a) injures or is capable of injuring the health or safety of a Person,
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> (b) injures or is capable of injuring property or any life form,
>
> (c) interferes or is capable of interfering with visibility,
>
> (d) interferes or is capable of interfering with the normal conduct of business,
>
> (e) causes or is capable of causing material physical discomfort to a Person, or
>
> (f) damages or is capable of damaging the Environment;

[39] Section 3.1 of the *Bylaw* then establishes a general prohibition against discharging air contaminants:

> 3.1 Subject to section 3.2, no Person shall in the course of conducting an industry, trade or business of whatsoever kind or nature discharge or allow or cause the discharge of any Air Contaminant.

[40] However, a person wishing to discharge air contaminants within the GVRD may be exempted from this general prohibition by obtaining a permit issued by a District Director under section 4.1:

> 4.1 The District Director may issue a Permit to allow the discharge of an Air Contaminant subject to requirements for the protection of the Environment that on reasonable grounds the District Director considers advisable and without limiting the generality of the foregoing the District Director may in the Permit
>
> (a) place limits and restrictions on the quantity, frequency and nature of an Air Contaminant permitted to be discharged and the term for which such discharge may occur;
>
> ....

[41] The District Director may also amend a permit on receipt of an application, or on his own initiative, when he considers it "necessary for the protection of the Environment", under section 4.4 of the *Bylaw* (cited earlier). This is the section used to make the amendments currently under appeal.

[42] It should also be noted that pollution is defined in section 1.1 of the *Bylaw* as:

> "Pollution" means the presence in the Environment of substances or contaminants that substantially alter or impair the usefulness of the Environment.

GVRD's Air Quality Complaint Process

[43] Most complaints are made by telephone to the GVRD's air quality complaint hotline. This hotline is not specific to odour from West Coast, but for any odour or air quality issue within the regional district. For the purposes of these appeals, only the process for complaints alleging odour from West Coast will be discussed.

[44] Most complaints alleging West Coast as the source of the odour are not independently verified by the GVRD. When a complaint is received, a GVRD officer fills in a complaint investigation form noting the wind speed and direction at the time of the complaint and the specifics of the complaint, including: a description of the odour, when it began, when it stopped and odour frequency. The officer will record his or her own observations and often calls West Coast personnel to find out whether there is anything happening at the plant that would contribute to higher than normal odours. This is also recorded on the form. Sometimes a correlation is found between the complaints and a problem identified with West Coast's equipment. Sometimes the GVRD officer determines that the odour is not from West Coast, such as when the wind direction at the time of the complaint is inconsistent with odour coming from West Coast. In the vast majority of cases where an odour is reported, there is no corresponding plant upset, equipment failure or unusual activity at the plant (i.e., it is operating normally), and the wind direction makes West Coast a reasonable suspect.

[45] Relatively few of the complaints made to the hotline are subject to an on-site investigation by the GVRD. Although such investigations were more common in the past, in recent years, formal investigations are less frequent. Currently, whether an officer attends the location of the complaint depends upon the number of complaints received, the wind direction, and the availability of staff. As a general rule, the GVRD will go out and investigate the complaints where they think they will "learn the most". This is often when there are many complaints made in a relatively short period of time.

[46] When the GVRD counts a complaint as being against West Coast, the evidence is that this does not indicate that the GVRD has "verified" that West Coast is the actual source, unless there is a confirmed plant upset, equipment failure or on-site investigation. Provided that the odour description and wind direction is consistent with the odour being from West Coast, the complaint is described as "substantially verified".

History of complaints

[47] The Panel was provided with a graph showing the number of complaints made each year against West Coast. The graph tracks the complaints from 1976 to 2006, but does not provide any analysis or explanation for the increases and decreases in the numbers. Some of the fluctuations may be due to changes in the

nature of the raw materials processed over the years, changes in the quantity of materials processed over the years, changes in the industrial area, changes in the surrounding residential areas, changes in odour control technology, or for some other reason.

[48] From 1976 to 1983, the number of complaints was less than 25 per year. From 1983 to 1985 there was a minor change, with complaints increasing to a peak of just over 50 complaints in 1984. The number of complaints then declined again.

[49] No significant change is shown again until 1990, when the number approached 100 and then spiked dramatically to over 300 in 1991 and in 1992. After 1992, the numbers dropped dramatically. This decrease corresponds with the installation of the first thermal oxidizer in 1993. GVRD witnesses testified that there was a significant decrease in odour observed in the community after the first thermal oxidizer was installed. For the next ten years, the number of complaints rarely exceeded 50 per year.

[50] In 2004, there was what can only be described as an "explosion" in the number of complaints. They went from just over 50 complaints in 2003, to 359 complaints in 2004. In or around this time, posters began appearing in the community encouraging people to call the GVRD when they smelled a foul odour attributed to the rendering plant. This is sometimes referred to as the "stop the stink" campaign that is ongoing within the community.

[51] The increase in complaints in 2004 led to the first of the changes to West Coast's permit relevant to these appeals.

West Coast's Permit

[52] West Coast has operated under an air emission permit issued by the GVRD since 1992.

[53] Prior to the amendments at issue, there were no permit limits on odour emissions *per se*. In fact, one of the issues to be addressed in these appeals is whether the legislation allows the GVRD to regulate odour directly in a permit.

[54] It was previously believed that unacceptable odour in the community would be caught by the general prohibition against pollution occurring "past the plant boundary". Odour was also addressed indirectly through amendments facilitating changes in odour control technology. Of particular relevance to these appeals is a 2006 amendment.

[55] Following the dramatic increase in complaints in 2004 and concerns with permit non-compliance, the GVRD required West Coast to submit a compliance plan which would reduce odours and bring the company into compliance with the general terms of its permit.

[56] West Coast applied for an amendment to upgrade the facility's odour abatement equipment. Specifically, it applied for an amendment allowing it to install a second thermal oxidizer, to upgrade the existing thermal oxidizer, and for additional provisions allowing West Coast to use ozone as an oxidizing agent in the packed tower scrubbers.

[57] The GVRD granted the amendment on May 11, 2006, and included a requirement for emission testing by August 31, 2006, dispersion modelling, as well as a requirement for West Coast to host a public information meeting "to receive feedback from members of the community regarding their experiences with odours from the Permittee's facility during the spring and summer of 2006." The emission testing was to be measured in odour units, but no limits on odour were imposed.

[58] The new equipment was installed soon after the amendment was granted.

[59] In accordance with the amendment, West Coast hosted a public meeting in October of 2006. It also provided the GVRD with a report showing the August 2006 aggregate total emission rate measured in odour units per second. This emission rate later formed the basis for the reductions in the 2007 amendment.

The 2007 Amendment

[60] Complaints from the community remained high in the summer and fall of 2006. Whereas there had been 347 complaints in 2005, there were 412 complaints in 2006. The dissatisfaction with the level of odour experienced in the community was further expressed during the public meeting hosted by West Coast in October of 2006. The District Director discussed the situation with West Coast.

[61] Ultimately, in December of 2006, the GVRD provided West Coast with a draft permit amendment for its consideration and comment. This draft contained the controversial requirement imposing odour limits on its emissions as measured in odour units.

[62] A follow-up meeting between the GVRD and West Coast was held in January of 2007.

[63] West Coast provided its comments on the draft amendment to the GVRD. In its comments, it made detailed objections to the necessity of the amendment at all, as well as to various requirements. West Coast advised of its focus on continuous improvement in odour control technology and advised of the improvements it was planning, on a voluntary basis. It also provided three professional reports in support of its submissions.

[64] Don Miller, a senior officer in the Air Quality Control Division of the GVRD, was the author of the proposed amendment. He reviewed these submissions and wrote a memorandum to the District Director recommending that the 2007 amendment be issued. In his memorandum dated June 18, 2007, Mr. Miller states under the heading "Highlights of Proposed Changes" as follows:

> Residents of the neighbourhoods adjacent to West Coast Reduction continue to report intolerable odours when the wind direction places them downwind of the facility. Public complaints against WCR are running at four times the number received in 2006, and may exceed 1500 by the end of 2007 if improvements are not forthcoming.

[65] Under "Introduction", Mr. Miller states:

> The existing West Coast Reduction Ltd. (WCR) permit was last amended in May of 2006. Since that time, public complaints regarding odours from the facility have continued, despite installation of a second afterburner and other

significant changes that should have resulted in improved odour control. GVRD staff has also noted rendering plant odours in the community from time to time. Due to the extraordinary impact of the WCR facility on surrounding neighbourhoods, it is recommended that the District Director take the unusual step of amending the existing permit unilaterally and imposing further requirements that are necessary for the protection of the environment.

[66] The District Director signed the amendment on June 18, 2007.

[67] A summary of the changes most relevant to these appeals are as follows:

- The imposition of odour *concentration* limits, as measured by odour units per cubic metre, and odour *discharge* rate limits, as measured in odour units per second, on five of the discharge stacks for the period July 1, 2007 to May 1, 2008. These limits are said to represent a reduction of approximately 28% from the aggregate total emission rate measured in August 2006. The sampling, collection and analysis of the stack emissions are to be conducted in accordance with West Coast's choice of either the U.S. or European criteria specified.
- Monthly odour testing and reporting is included to provide a basis for evaluating the success of the various odour control measures implemented by West Coast.
- A comprehensive odour control action plan is required. This plan is to include proposed maximum odour concentrations and odour discharge rates for the five main discharge stacks to be achieved by Mary 1, 2008, a predicted maximum odour concentration in the community associated with these odour discharge rates (as predicted by periodic dispersion modelling, below), and a description of any equipment and process modifications (in place or planned) that will contribute to the reduction of odours in the community.
- Periodic dispersion modelling is to be performed based on accumulated test results in order to determine the impact on the community over time.

[68] West Coast appealed the 2007 amendment on July 16, 2007, but complied with the permit amendments "under protest".

[69] It should be noted that two days after the 2007 amendment, on June 20, 2007, the GVRD held a neighbourhood meeting to provide an update on its regulatory actions, including an explanation of the 2007 amendment. Feedback on these actions was sought. Approximately 70 people attended the meeting. The GVRD also invited the attendees to participate in a community liaison group that would provide ongoing input from the community. This led to the formation of the Grandview-Woodland Community Advisory Committee. The four Third Parties in these appeals (who also appealed the 2007 amendment) are members of that committee.

2008 Amendment

[70] By the end of 2007, there were 627 complaints attributed to West Coast odour, an increase of 215 complaints from 2006. By this time, the GVRD was already working on a further permit amendment.

[71] In February of 2008, the GVRD held a Grandview-Woodland neighbourhood meeting in order to discuss a draft 2008 permit, as well as to obtain public input on the impact of West Coast's odours on residents during the summer of 2007, to discuss the GVRD's plans to control rendering plant odours in the community, to establish ambient odour objectives for the facility and to further discuss community involvement. The GVRD invited people living in the community to attend the meeting. Approximately 35 people from the community attended.

[72] The GVRD discussed the draft 2008 permit amendment with West Coast and gave the company an opportunity to make submissions, which it did.

[73] In a March 14, 2008, memorandum to the District Director regarding the draft 2008 amendment, Mr. Miller states:

> Permit GVA0141 was last amended June 18, 2007 to introduce odour concentration limits and odour discharge rate limits on five stack discharges at the plant … as well as an enhanced monitoring and reporting program. At the time of the last amendment, it was anticipated that further amendment(s) of the permit would be necessary in order to ultimately reduce odorous emissions to a level that would result in an acceptable concentration of odour in the community surrounding the plant. A continued high rate of public complaints during 2007 has confirmed the necessity of further reductions in odorous emissions.

[74] After reviewing the concerns expressed by both the community and West Coast in relation to the 2007 amendment, Mr. Miller recommended that the District Director unilaterally amend the permit in accordance with an attached draft.

[75] The District Director signed the permit amendment on March 14, 2008.

[76] In contrast with the 2007 amendment, the 2008 amendment further reduced the odour unit limits for each stack emission point, except for one which received a slight increase and one which received the same concentration limit based on the 2007 results. Collectively, the new limits are said to represent an overall decrease in odorous emissions of just under 21%.

[77] In addition, the 2008 amendment imposed a number of new planning, monitoring and reporting requirements such as a requirement to continuously monitor and record wind speed and direction at the plant site, and to fax daily summaries of this information to the GVRD during the months of May through September. Of relevance to these appeals, he also required a weekend and statutory holiday odour management plan that "when implemented, should provide assured odour-free periods of time on weekends and statutory holidays from the beginning of May to the end of September."

[78] West Coast appealed this amendment on March 28, 2008, but complied with most of the 2008 amendments, again, "under protest".

West Coast's position on the appeals

[79] West Coast argues that both amendments are flawed on legal as well as practical grounds. Although briefly outlined at the beginning of this decision, the Panel will review its submissions and arguments in more detail below.

Jurisdiction

[80] West Coast submits that there are no "reasonable grounds" for the amendments: there is no reliable evidence establishing either material physical discomfort or substantial impairments to the environment that would necessitate amendments to protect the environment. West Coast questions the evidentiary value of the complaints, as there was minimal investigation and verification by the GVRD that West Coast's plant was the source of the alleged odour.

[81] It submits that, prior to the 2007 amendment, West Coast's odours had already been dramatically reduced as a result of employing "best available control technology". It submits that absent clear and compelling justification, the District Director's decision is unreasonable and a questionable exercise of his jurisdiction.

[82] In addition, it maintains that there are no reasonable grounds establishing that the amendments will actually *result* in environmental protection.

Odour units

[83] The District Director introduced "odour units" as a compliance mechanism. Odour units are not contained in any British Columbia statute, regulation, bylaw, protocol or guideline.

[84] West Coast submits that the District Director erred in introducing odour units because:

- he does not have the power to impose a new unit and standard of measurement on his own initiative;
- odour units were not adopted on the basis of sound regulatory principles as there was a lack of formal research and analysis prior to adoption, and there are no guidelines for the use of odour units within permits; and
- scientific evidence establishes that odour units are inherently flawed as a compliance mechanism as they cannot be accurately or precisely measured.

[85] In the alternative, if the District Director does have jurisdiction to amend the permit and to adopt a new unit of measure, West Coast submits that the imposition of odour units to address odour was an improper exercise of discretion because his jurisdiction is limited to "air contaminants", and odour is not an "air contaminant", as defined in the GVRD *Bylaw*.

[86] It should be noted that West Coast does not object to odour units being used for information purposes. Its argument is that there are inherent flaws in the measurement and calculation of odour units which make it objectionable for compliance and enforcement purposes.

Weekend and Holiday Odour Management Plan in the 2008 amendment

[87] West Coast argues that the District Director exceeded his jurisdiction by ordering a plan that would assure odour free periods during weekends and statutory holidays from May through September as this is essentially a requirement for weekend closures.

[88] Further, the practical impact of this provision would be to "back-up" materials to be processed which could actually increase odours. In addition, if West Coast is no longer able to accept all of the raw materials that it currently processes, its clients may turn to less environmentally sound methods of disposing of raw poultry, fish and pork waste.

Additional Considerations

[89] West Coast maintains that its rendering plant provides an essential service in an environmentally sound manner. It submits that the District Director should have given more weight to the beneficial nature of West Coast's service to the Province in his analysis.

[90] West Coast also maintains that the amendments were not necessary as there are other options for addressing complaints. West Coast asserts that it is "steadfast" in its commitment to continuous improvement of odour abatement. In its view, continuous improvement, as opposed to the introduction of odour units, will lead to the "acceptable level of odour" in the community. To facilitate this outcome, it proposes a technological "round table" involving the community, the GVRD and West Coast. West Coast would pay for a facilitator and the facilitator would be chosen with the consensus of all of the parties. The objective would be to build trust between the community and West Coast and to reach achievable solutions to the odour issue.

The District Director's position on the appeals

Jurisdiction

[91] The District Director submits that he was acting within the jurisdiction given to him under the GVRD *Bylaw* when he issued the amendments, and that he reasonably exercised his discretion in imposing the various requirements and conditions.

[92] The District Director submits that the number of complaints received by the GVRD regarding odour from West Coast made it clear that further improvements were "necessary". Further, he is confident that the majority of complaints received by the GVRD in relation to West Coast do, in fact, relate to West Coast odours – they are not from other sources. This is based on investigations, the experience of staff, as well as West Coast's air dispersion modelling data.

[93] The District Director submits that the odour he is addressing in the amendments fits within the definition of "air contaminant", most notably, it is a substance emitted to the air that is "capable of causing" an impact such as "material physical discomfort" to a person.

Odour Units

[94] In relation to the inclusion of odour units, the District Director submits that the legislation grants him broad powers to manage air contaminants, and provides him with significant discretion to decide what terms and conditions to include within a permit. These include the discretion to require odour to be measured using odour units. No regulation is needed to expressly designate odour as an "air contaminant", nor to specify the units for measurement of that contaminant.

[95] The District Director also points out that odour testing has been standardized by both the American Society for Testing Materials ("ASTM") and the European Union (the European Standard method, EN 13725). It is not a new and untried method.

[96] In response to West Coast's focus on issues of accuracy and precision in the measuring of odour units, the District Director argues that this should not be the focus of the Board's inquiry: this question should be left to a proceeding dealing with non-compliance where the case turns on whether the testing produced an accurate result. Instead, the question before the Board should be whether the odour unit limits that he set in the permit are relevant, clear, properly defined, fair and appropriate as performance requirements. He submits that they are.

[97] The District Director submits that odour units are the most appropriate method to evaluate and regulate the environmental problem at stake: odour in the community. In his view, stipulating the maximum allowable quantities of odour in odour units is the best available means of establishing performance requirements that are clear and unambiguous so that the company, and the community, knows the requirements.

[98] In terms of the actual number of odour units imposed, the District Director points out that the odour emission limits placed in the 2007 and 2008 amendments were based on numbers that the company proposed in its comments, albeit under protest. The District Director submits that they are not excessive, that they can and have been met, and that they are reasonable in the circumstances.

Weekend and Holiday Odour Management Plan in the 2008 amendment

[99] The District Director submits that he had the authority to impose the weekend odour management plan pursuant to section 4.1 of the *Bylaw* which allows him to place limits within a permit on "the quantity, ***frequency*** and nature of an Air Contaminant permitted to be discharged and the term for which such discharge may occur" [emphasis in original]. He submits that the frequency of the release of an air contaminant is something that is within his authority to control. In this case, the facts support the imposition of a plan for weekend odour management.

[100] The District Director also points out that the imposition of a plan was in response to the pre-amendment discussions between GVRD staff and West Coast. West Coast was opposed to weekend curtailment and suggested, instead, that a weekend odour management plan be included in the amendment. He acknowledges, however, that the requirement included in the amendment does not quite reflect what he intended and should be amended. Specifically, he did not intend "assured odour-free periods"; rather, his intent was to provide the residents

with substantial relief from West Coast odour on weekends, until such time as West Coast emissions do not result in unacceptable air quality in the community. Therefore, the provision should be changed to reflect the following intent: "assured periods of substantially reduced discharge of odorous emissions that may adversely affect the community".

General

[101] The District Director submits that he engaged in meaningful consultation with West Coast and the community and gave due consideration to both of their needs. He submits that there is no rationale for changing either amendment, except as stated above.

[102] Finally, the District Director submits that his objective of achieving acceptable air quality in the community will take some time. In this regard, the amendments balance the needs of the community and West Coast. The District Director maintains that he is well aware of West Coast's contribution to the overall management of waste in the Province. Given the key role of West Coast in the management of animal wastes in British Columbia, he is taking a "stepping stone" approach to achieving acceptable air quality in the community. This will allow West Coast time to consider options and implement the necessary changes. To date, the District Director maintains that the requirements and restrictions on odour have "been well within the company's capabilities."

The Third Parties' position on the appeals

[103] The Third Parties submit that West Coast has not dramatically reduced odours from its facility and does not employ the "best available control technology". They submit that the odours from West Coast's facility are "egregious and intolerable", and that the District Director had the jurisdiction to require relief from the material physical discomfort caused by West Coast's odorous air emissions. Referring to the definition of "pollution" in the GVRD *Bylaw*, the Third Parties submit that West Coast's odorous air contaminants constitute pollution as they "may alter or impair the usefulness of the environment", which includes the air in the neighbourhoods in which they reside. Accordingly, the amendments were "necessary for the protection of the environment."

[104] The Third Parties also submit that the District Director had the authority to impose odour units in the amendments and that they do not need to be expressly authorized or contained in a statute, regulation or bylaw in order for him to utilize them as a standard of measurement in a permit. Odour units are recognized as standards of the ASTM and the European Committee for Standardization, and, as such, have undergone adequate professional assessment for use by the District Director in the terms and conditions of permits.

[105] The Third Parties submit that the GVRD *Bylaw* authorizes the District Director to specify odour units in a permit and to impose the terms and conditions in both the 2007 and 2008 permit amendments. They are capable of adequate precision in measurement for inclusion in the permit. However, they submit that the limits set were too low. This is the subject of their own appeals of the amendments.

[106] The Third Parties also argue that the District Director had the jurisdiction to require odour reductions on weekends and statutory holidays, and that the requirement for a detailed plan for managing odours on weekends and statutory holidays, from May through September, is reasonable.

ISSUES

[107] The Panel has identified the following issues to be decided in West Coast's appeals:

1. Whether the District Director had jurisdiction under section 4.4 of the GVRD Bylaw to amend the permit in 2007 and 2008, on his own initiative, in the circumstances?
2. If so, is odour an "air contaminant" that can be specifically regulated in a permit amendment?
3. If so, whether the amendments at issue are reasonable. Specifically, whether the amendments relating to (a) odour units and (b) curtailing operations on weekends and statutory holidays during the warmest months, are reasonable. The Panel has broken down this issue as follows:
   - A) Odour Units
     - i) Is specific legislative authority required to impose a "new unit of measure" in the permit?
     - ii) Is the imposition of odour units in West Coast's permit, to be used as an enforcement tool, reasonable?
   - B) Curtailing operations on weekends and statutory holidays during the warmest months.
4. Whether the rendering plant's importance to the environment and to agriculture in British Columbia is a relevant consideration in a permit amendment decision.

EVIDENCE AND ANALYSIS

1) Whether the District Director had jurisdiction under section 4.4 of the GVRD *Bylaw* to amend the permit in 2007 and 2008, on his own initiative, in the circumstances?

The Legal Context

[108] Section 4.4 of the GVRD *Bylaw* states:

> **Amendment of Permits and Approvals**
>
> **4.4** Subject to section 4.5, the District Director may
>
> (a) on the District Director's own initiative where on reasonable grounds the District Director considers it necessary for the protection of the Environment; or
>
> (b) on written application by the Permittee;

> amend the requirements of a Permit or Approval by changing or imposing any procedure or requirement that was imposed or could have been imposed under section 4.1.

[109] According to this section, for the District Director to validly amend a permit "on his own initiative", two things must be established. The District Director must have reasonable grounds for the amendment. This is an objective test. That is to say, a reasonable person placed in the position of the District Director must be able to conclude that there were indeed grounds to amend the permit, and the grounds provide a reasonable basis to do so.

[110] Further, the grounds must reasonably establish that an amendment is "necessary for the protection of the environment". "Environment" is defined in section 1.1 of the GVRD *Bylaw* (and section 1 of the *Environmental Management Act*) as follows:

> "Environment" means the Air, land, water and all other external conditions or influences under which humans, animals and plants live or are developed;

The Evidence

The Respondent's evidence

[111] The District Director is a professional engineer. For the past 20 years, he has worked with various agencies on issues either directly or indirectly related to odour and how to regulate odour.

[112] The District Director began working with the GVRD in May of 2005. At that time, he states that the issue with West Coast Reduction had grown to be "a rather large issue", and has continued to be.

[113] The District Director provided the background to the amendments as follows.

[114] After the second thermal oxidizer was installed in the summer of 2006, he attended the public meeting hosted by West Coast in October. At that meeting, it became clear to him that there was a lot of anger directed at the GVRD for the continuing odour problem and for not doing enough to improve the local air quality. He noticed that people generally thought West Coast was doing what it could, but people were still experiencing unacceptable odours. As he describes it, there was "a great deal of froth and anger" expressed at that meeting by a number of individuals about what they were having to put up with, and this was after the technology-based solution in the 2006 permit amendment. This disappointment with the technology-based solution was one of his main reasons for deciding to move towards performance-based requirements in West Coast's permit.

[115] The District Director explained that he first became aware of odour units when he attended an Environmental Appeal Board hearing in 2000. A witness at the hearing, a researcher at the University of British Columbia, had done some work on odour units and was able to describe their value as a regulatory tool. The District Director was working with the Ministry of Environment at that time, and became interested in regulating odour using performance-based methods as opposed to technology based methods. In the District Director' view, when the

outcome is important, performance based regulation is more likely to provide the desired outcome.

[116] In his Statement of Points, the District Director explains his rationale for the 2007 amendment as follows:

> Despite requirements established through previous amendments of the West Coast Reduction Ltd. permit; evidence presented by community residents at public meetings and through numerous complaints received via the telephone, or email, and substantiated by Metro Vancouver staff made it clear that air quality in the community was unacceptable and that amendment of the permit to impose further requirements was necessary to protect the environment, i.e., to achieve acceptable air quality in the community.

[117] At the hearing the District Director explained that "acceptable air quality in the community" was air quality that he considered to be acceptable for the community. He determined what is "acceptable" after considering information provided by the residents, including their "odour logs", the observations of staff, the information provided by West Coast, as well as from looking at the ambient odour objectives that have been imposed or developed in other jurisdictions dealing with rendering plants or similar types of odours.

[118] In his written argument, the District Director cites the complainants' physical discomfort and the unacceptable air quality in the community as being the "environment" in need of protection.

[119] Regarding the 2008 amendment, the District Director states that at the February 2008 neighbourhood meeting, numerous members of the community expressed anger and outrage about continued unacceptable odours from West Coast's facility, despite the previous amendment. The Panel notes that 35 people attended that meeting. These same sentiments had been expressed to the District Director at the previous neighbourhood meeting on June 20, 2007, held two days after the 2007 amendment. At that time some people suggested that the plant should shut down on weekends, and some said that the plant should move out of the community.

[120] In terms of the amendments themselves, the District Director explained to the Panel that it was Mr. Miller's job to recommend amendments that he felt would address the unacceptable levels of odour in the community. He described Mr. Miller's role as akin to a project manager: his job was to consider technology-based requirements, performance-based requirements, communicate with other jurisdictions, experts, and other staff. Several staff, including engineers and meteorologists, have looked at and discussed odour issues over the years. Mr. Miller was to go out and talk to all these people and come back with a recommendation for a permit amendment in 2007, and again in 2008.

[121] Mr. Miller testified at the hearing. He is trained as a chemical engineering technologist. Mr. Miller has worked for the GVRD for 27 years doing regulatory and inspection work: first as an officer, and for the past 15 years as a senior officer with the air quality division. For the past year and a half, Mr. Miller has directly supervised people involved with the West Coast file.

[122] Mr. Miller testified that the total number of complaints for the entire region against all sources is between 2,000 and 2,400, and that West Coast's facility represents the largest single source of odour complaints.

[123] He testified that, after the first thermal oxidizer was installed in 1993, he personally noticed that the odour from West Coast had diminished. However, he noticed that the odour seemed to "creep back" some time afterwards. More people began calling the complaint line, and people advised him of cancelling outdoor barbecues and postponing dinnertime due to the odour.

[124] After talking with people over the years, Mr. Miller said that it was apparent that West Coast's odour was causing some people great difficulty. He has personally noticed the odour on occasion, and finds it "offensive". His experience is with the odour coming intermittently – in short bursts – lasting maybe a minute, but he states that it is "very detectable" and unpleasant.

[125] Aside from public complaints and his own observations, he has also spoken with other GVRD officers who have worked on West Coast's file over the years. He states, "We have all detected the odour from time to time. I think it's a matter of opinion as to how strong it is and how it would affect one if that was their home, but certainly they have all noted the odour."

[126] In terms of determining the source of the odour, Mr. Miller observed that it would be ideal if the officers could go out to investigate each compliant and trace it back to the source. However, with thousands of complaints per year, not all about West Coast, this is impossible. Instead, the GVRD evaluates the complaint using the process described in the background to this decision.

[127] Mr. Miller testified that after the second thermal oxidizer was installed in 2006, he had significant concerns due to the unexpected number of complaints the GVRD continued to receive, as well as staff observations of odour. He understands that the company was attempting to balance the air flows between the thermal oxidizers and the wet chemical scrubbers at that time; it is a complex system and requires a delicate balancing act to ensure both are working effectively and efficiently. However, after the summer of 2006, Mr. Miller expected that the system would be fined tuned. Given the number of complaints in 2007, he concluded the situation had not improved.

[128] Mr. Miller was aware that, in 2007, West Coast was already planning additional works and measures to address concerns that were apparent in the community. Mr. Miller was also aware of the company's position that improvements were necessary and would be forthcoming. However, in his view, the problem seemed to be "getting worse" after 2006, based on the number of complaints. Mr. Miller testified that the District Director wanted "quicker action and more substantive improvement."

[129] In his memorandum in support of the 2007 amendment, he reviewed the number of public complaints against the facility between 2001 and 2007:

2001: 51 complaints

2002: 49 complaints

2003: 55 complaints

2004: 359 complaints

2005: 347 complaints

2006: 412 complaints

2007: 229 complaints in less than 5 months

[130] He then notes in his memorandum that "considering there has been very little warm weather so far in 2007, the number of complaints this year could exceed 1500 if odours are not significantly reduced." He later acknowledged in cross-examination that, by the end of 2007, the GVRD actually received less than half that amount, but he did not mention that fact in his memorandum in support of the 2008 amendment.

[131] In a 2008 memorandum, he notes that the community advised that "the odour limits specified in the previous permit are too high and result in unacceptable impacts on residents of the community including abandonment of outside activities such as gardening and social gatherings (eg. barbecues)". Mr. Miller expanded upon this at the hearing, stating that he has heard of residents complaining that they experienced occasional nausea and headaches, and had to close windows or leave the area on hot days. He also heard that people are angry and frustrated with how long this has been going on. Mr. Miller said he has no reason to doubt the residents' reports.

[132] Mr. Miller also states in his 2008 memorandum that "odours from the facility have continued, despite an apparent reduction in odour discharge rates" and that GVRD staff have continued to note rendering plant odours in the community from time to time.

[133] Mr. Miller acknowledged that there was a "stop the stink" campaign in the community and that he may have been aware of it in June of 2007, but was certainly aware of it by 2008. He did not mention the campaign in either memoranda to the District Director. In his view, this campaign did not change the underlying fact, verified by personal observation, that there were still unpleasant odours experienced in the community.

[134] When presented with the GVRD's complaint data at the hearing, Mr. Miller confirmed that many complaints originate from the same household. He confirmed that of the 412 complaints in 2006, the total number of individual complainants was 133. Of the 627 complaints made about West Coast in 2007, there were 157 individual complainants. He acknowledged that the vast majority of the community around West Coast's plant neither complains about the odour nor attended the GVRD's neighbourhood meetings.

[135] Mr. Miller was also asked about the 21 complaints against West Coast that had been made between January 1 and March 14, 2008, prior to the 2008 amendment. Mr. Miller agreed that of those 21, five were still under investigation at the time of the hearing, eight were confirmed by the GVRD as being from West Coast, and the other eight are described as "offender unknown". Mr. Miller agreed

that he did not include this 2008 data in his memorandum, but says that this data is from the middle of the winter.

[136] At the hearing, the most recent complaint data for 2008 was tendered in evidence: the complaints from January 1 to July 15, 2008. There were a total of 167 complaints against West Coast, with 115 of those complaints "substantially verified" as being from West Coast. Of those 115 complaints, Mr. Miller confirmed that 59 of them came from seven households. Based on the new data, Mr. Miller acknowledged that the situation appears to be getting better, and that "it's only the more sensitive people who are going to call." However, he believes that without the "push" from the amendments, this improvement might not have happened.

[137] Regarding the requirements in the amendments, Mr. Miller explained that he included odour unit limits after researching them on the internet, speaking to regulators in other jurisdictions and after discussions with the District Director. In relation to dispersion modelling, the idea was to use the modelling to predict the odour that would be experienced in the community. He talked to the meteorologist on staff about the feasibility of this.

[138] Mr. Miller testified that the odour unit limits he recommended in 2007 were based upon the testing West Coast performed in accordance with the 2006 amendment, and that the 2007 limits were not intended to be the final ones. This is why the 2007 amendment imposed those limits from July, 2007 until May 1, 2008. He wanted these test results in order to better understand the actual discharge rates, see what happens in the warmer weather, and then use that information, plus information from the company, to arrive at a lower rate after May 1, 2008.

[139] The company's odour testing results after the 2007 amendment were generally well within the limits imposed in the amendment. Mr. Miller based the odour unit limits for the 2008 amendment on those 2007 results. He picked the highest numbers from that year of sampling. When asked why the 2008 limits were not lower, as people were still having problems with the odour and West Coast was meeting the previous limits, Mr. Miller advised that the company agreed to the 2008 limits, even though it objected to including them in the permit. Mr. Miller also explained, "I knew that further reductions were going to be likely necessary, it was probably not the best place or best time to impose numbers that they might not be able to meet in the short term." He further stated that the limits imposed in the permits are maximums, to take into account worst case conditions.

[140] Overall, Mr. Miller agreed that the testing results from July 2007 to date show a downward trend in the odour discharge and concentration rates, although he acknowledged that it does not necessarily mean an overall decrease in the odours. He also acknowledged that he did not expect that the limits in the 2008 permit amendment would satisfy the community, or result in a cessation of complaints. However, he stated that as the GVRD gains experience with the measurement of odour and with the experience of odour in the community, it will be better able to assess the correlation between the two and hopefully confirm that with dispersion modelling. He testified that the ultimate goal is an odour limit that is acceptable in the community, and achievable by the company.

[141] Mr. Miller testified that the GVRD is not prepared to impose a further technological modification on West Coast in order to reduce the odour experienced in the community. The technological solutions that the GVRD thought would work in 2006 did not have the desired effect. Mr. Miller notes that incineration for the high intensity odours is generally accepted as the best way to do it but, for some reason, other odour sources within the plant are still causing problems in the community. Mr. Miller believes that, once the GVRD determines the odour discharge rates from the plant that result in acceptable odour concentrations in the community, the company will have the opportunity to determine how they will achieve that rate by using a technological solution.

West Coast's evidence

[142] West Coast called three witnesses who work close to the rendering plant.

[143] Kumi Kimura is the day manager at the Cannery Restaurant located on the waterfront of Burrard Inlet, approximately two blocks east of the rendering plant. She has worked there year-round for 15 years. This is a well-known and successful restaurant with 240 seats. Ms. Kimura testified that she has never noticed smells from the rendering plant and that she has never had a complaint from customers, nor employees, about odour from the rendering plant. Ms. Kimura identified many other smells in the neighbourhood, but none identifiable as being from West Coast's plant. Ms. Kimura also jogs in the area.

[144] Joan Agreometros is the owner of Dockers Diner located on Powell Street, one block north of the rendering plant. She has owned the diner for five years. Ms. Agreometros said she has the windows open all of the time (24 hours/day) and never smells odour from the plant. Her customers include tourists, residents and industrial workers, none of whom have ever complained about odours. Although she smells general industrial area odours, she said there is no odour she can distinguish as specific to West Coast's plant. The diner is located on land below West Coast's emission stacks.

[145] Linda Fleming lives on Franklin Street, a ten minute walk away from West Coast's plant. She has lived there for 20 years. Ms. Fleming manages her apartment building, and has managed other buildings in the area over the years. She walks her dog daily in the area.

[146] Ms. Fleming's building is on a hill at a height above or equal to West Coast's emission stacks. Although she used to notice rendering plant odour more often, Ms. Fleming testified that "there has been a noticeable improvement." She used to notice odour from the rendering plant but doesn't now.

[147] The Panel also heard extensive evidence from Kenneth Ingram, the Director of Technical and Environmental Services for all of West Coast's plants.

[148] Mr. Ingram testified with respect to West Coast's response to the increase in complaints after the second thermal oxidizer was installed in 2006. Although there were several "start-up" commissioning problems with the new thermal oxidizer", Mr. Ingram thought that, with the other odour control processes at the plant, there shouldn't have been so many complaints.

[149] In order to understand what was happening in the community, Mr. Ingram spent almost every night between June and September of 2006 walking around the neighbourhood after work. Mr. Ingram described his nightly walk routine as follows.

[150] He would drive through the area of Eton, Cambridge and the area east of the plant. Then he would drive up Nanaimo to Parker, or a few blocks past, and start making his way northwest through the area where complaints had been coming from. He would stop and walk around. He also went out during the day sometimes. On occasion, he would talk to residents to determine whether they smelled odours from the plant.

[151] Mr. Ingram said that when he was in the area where most of the complaints originate, to the southeast of the plant, he noticed many different odours and observed people doing normal neighbourhood activities such as gardening. At least twice he smelled a West Coast component in the mix of odours, but in his view it was not very strong.

[152] Mr. Ingram believed that it was important to go out for so many months because not finding odour on one occasion "doesn't really tell you anything: you need to be up there long enough to have any confidence that what you're experiencing is representative." However, after four months of these walks in the neighbourhood, Mr. Ingram said that he did not have any clearer appreciation of the complaints. In fact, on two occasions he received a call that an odour had been reported in the area where he happened to be, but he, personally, had not smelled a West Coast odour. On one occasion, he was in an area east of the plant, around Eton and Cambridge, and noticed a pretty obvious fish odour. When he got back to the plant, he heard that a complaint had been made alleging West Coast as the source of a "fishy odour". He notes that fish processors are directly across the railroad tracks from the area of the complaint, and, as far as he could determine, it was not a West Coast odour.

[153] On another occasion, Mr. Ingram went on a neighbourhood walk during the day and was on the 2000 Block of Pender, a high odour complaint area. He spoke with a woman on her porch about her experience with the odour. She said she hadn't smelled anything for some time, and wasn't bothered by it. He walked further and then came back. As he was talking with her again, he received a call from someone at the plant advising that they had just received an odour complaint from someone on the 2000 Block Pender, the same street he was on. Mr. Ingram states: "That, as you can imagine, makes for some confusion."

[154] Mr. Ingram also reviewed the GVRD's complaint database to try to understand what was happening in the community. Specifically, where are there high concentrations of complaints, where are there low concentrations and where are there no complaints?

[155] Mr. Ingram explained that, prior to 2006, the way the GVRD's complaints were recorded made analysis difficult. At the request of West Coast, the GVRD came up with a new coding system for complaints; it began assigning a code to each complainant. Because the code is given to the person, as opposed to the household or address, one household may have multiple codes if more than one

member of the household calls in a complaint. Neither names nor residential addresses are given to West Coast, just the code number and the block number (e.g., 2100 Block Pender).

[156] From his review of the 2006, 2007 and 2008 complaint data, Mr. Ingram states that he has more questions than answers. He explains that, in 2006, one household on Parker Street complained 48 times in one year, but a person living a block and a half away telephoned Mr. Ingram that same year in response to a notice of public meeting and thanked him for the improvements. He also gave examples of situations where one household would have a very high number of complaints, but there would be no complaints from houses within two square blocks of it. He questions: "Why is it really bad for one household, but seemingly no impact on the others?"

[157] Mr. Ingram also noticed that, in 2006, three households accounted for 34 percent of complaints, and thirteen houses accounted for 55 percent of the complaints. In the first three months of 2008, he noticed that one third of the 21 complaints were from the same complainant.

[158] To determine how many of the total number of complaints alleging West Coast as the source of odour were actually attributed to West Coast by the GVRD, Mr. Ingram looked at the GVRD's older data. In 2003, of the total complaints made, only 28% were attributed to West Coast by the GVRD. In 2004, 85% were attributed to West Coast and Mr. Ingram states that number is relatively steady to present.

[159] In Mr. Ingram's view, the basis for the amendments is questionable given that the real problem areas appear to be less widespread than the complaint numbers suggest, and given West Coast's own efforts to continually improve odour control at the plant. Mr. Ingram testified that, since 2002, West Coast has spent approximately $2.5 million in odour abatement technology. The thermal oxidizer alone cost $2 million dollars. Further, prior to the 2007 amendment, West Coast had already planned certain improvements and advised the District Director of those plans in its comments on the draft amendment. Even without the 2007 amendment, West Coast made the following odour reduction modifications since the summer of 2006:

- installation of air inlet dampers upstream of the induced draft fans on the air scrubbers;
- installation of demister assembly upstream of the regenerative thermal oxidizer;
- pretreating high intensity odours from the fish processing plant before they enter the thermal oxidizers; and
- improving the reliability of the new thermal oxidizer.

[160] Mr. Ingram also identified two modifications planned for May of 2008, one involving the feather system high intensity scrubber, the other involving the replacement of the main scrubber packing material with a more efficient media type. These modifications will cost $40,000. However, Mr. Ingram also

acknowledged that some of these changes are more in the nature of minor adjustments and may not have a noticeable affect on odour.

[161] Mr. Ingram said that based on his personal travels to other rendering plants, as well as the comments from other rendering plant visitors to West Coast's facility, West Coast's plant is a leader in odour abatement technology. He notes that this was also the finding of Dr. Carl Peterson with SCP Control, Inc. of Minneapolis, Minnesota. After studying West Coast's odour control systems, Dr. Peterson concludes in his report to West Coast, dated March 30, 2007, that West Coast's systems meet the Best Available Control Technology (BACT) criteria and "represents Best Management Practices as applied within the Rendering Industry operation." This report was provided to the District Director before he issued the 2007 amendment.

Third Parties' witnesses

[162] The Panel heard from three of the Third Parties (Mr. Dickson, Ms. Redlin, Ms. Craigie), as well as two of their witnesses (Dr. Penny Thompson and Karen Cowan). All of these people live within the Grandview-Woodland area.

[163] Don Dickson lives at 1945 Ferndale Street, approximately half a kilometer southeast of the plant. He also has a home office at this location. He and his wife moved to this house in 2001.

[164] Blair Redlin resides at 1969 East Georgia Street, approximately 10 blocks away from the rendering plant. He has lived there since 1990.

[165] Sheila Craigie lives at 1998 William Street, approximately 1.5 kilometres from West Coast's plant. She moved there in 2002.

[166] Dr. Penny Thompson lives on Commercial Drive, southeast of West Coast's plant. She has lived there since 1999.

[167] Karen Cowan lives at 231 Templeton Drive. She has lived in the area for 18 years, the longest of the witnesses.

[168] Other than "usual urban odours", most of these witnesses said they were not aware of the potential for odour from West Coast's rendering facility when they purchased their homes.

[169] Regarding the nature of the odours experienced, the residents variously described them as follows: "rotting, foul, acrid", "hideous", "revolting", "repulsive", "of rotting flesh" and "foul - smells like a combination between vomit and diarrhea". Mr. Dickson said that, "at best, it is like pet food – a mealy sort of smell; at worst, it is a rancid, acrid smell of rotten meat – a rotting, burning flesh kind of odour".

[170] All of these witnesses believe that West Coast is the source of these particular odours. They all maintain that the rendering plant emits a "unique", "identifiable" type of odour. Most have made the effort to try to track the odour to its source at one time or another, and state that they were able to track the offensive odour to the rendering plant. All of these witnesses are confident in their ability to discern West Coast's odours from the other unpleasant odours in their community. Further, all of them testified that the odour is much worse during the warmer months, from early May to late September. However, they also say that

the timing and duration of the odour is neither consistent nor predictable. The evidence is that some days there is no odour whereas other days it can be detected intermittently throughout the day; some days it lasts for minutes, other times it will last for hours. The intensity of the odour also varies.

[171] All of the residents testified that the odour significantly affects their social life, their overall enjoyment of their properties and their quality of life, especially during the summer. With the exception of Ms. Craigie, all of the residents also testified that the odour had some health impact, especially during periods of intense odour. The most common impacts described were headaches, nauseousness, inability to concentrate and general distress. Mr. Redlin has experienced "wretching", and Dr. Thompson sometimes experiences runny eyes and a sore throat. They also commonly experience feeling of frustration, anger and even depression with the situation.

[172] The commonly described impacts to their social lives and enjoyment of their properties were:

- have stopped inviting people over for parties or barbecues,
- are forced indoors with windows and doors shut, even on hot days,
- being "put off" your food/leave the house at meal time,
- go away for weekends, and
- feel embarrassed and ashamed when guests smell the odour.

[173] These impacts were not always because odours were present. In some cases they result out of a fear that odour will unexpectedly occur. Mr. Redlin commented that it disrupts one's ability to live a "regular life".

[174] All of the residents believe it is important to contact the GVRD when they experience unpleasant odours, and all of them do so regularly. Thus their evidence is an example of the types of complaints received by the GVRD that were relied upon by the District Director in making the amendments. However, their evidence is also that they do not complain every time they smell an odour.

[175] Although many of the residents' generally acknowledge the benefits of the rendering facility, they also believe that they should be able to enjoy more odour-free periods and have more predictability in the odorous periods. They strongly believe they should be able to enjoy their properties and have an air quality similar to other urban areas in Vancouver.

[176] Overall, there is a sense of frustration and hopelessness on the part of these witnesses. Despite many years of experiencing the odour, complaining to the GVRD, participating in public meetings and advisory committees, keeping track of the odour, and being given hope by the officials that something will be done, they are of the view that nothing is happening and that West Coast doesn't care.

Analysis

How to reconcile the fact that complaints have increased despite the improvements in odour control technology

[177] It is clear that both West Coast and the District Director believed that the installation of the second thermal oxidizer in 2006 would significantly reduce the odour from the plant, with a corresponding reduction in complaints. Thermal oxidizers are considered to be a more efficient method of odour control than scrubbers. The District Director testified that he knows that West Coast's thermal oxidizers "take on a huge load" because when they both "went down" for an hour or so on one occasion, the phone lines "lit up", and he personally noticed the odours to be "very powerful". For him, this highlighted the effectiveness of the two oxidizers.

[178] However, despite this technology, the complaints increased in the summer of 2006 and in 2007. At the hearing, there were various theories as to why complaints have been on the increase since 2004, and particularly since 2006. They include the existence of an advertised GVRD complaint line, the changing demographics due to rising house prices in east Vancouver, as well as the organized efforts of the Grandview-Woodland community to bring odour concerns to the attention of the GVRD.

[179] Regarding the latter, West Coast provided a copy of two posters found in the community by a GVRD officer between 2004 and 2005. The first one found in May 2004 states, "Are you sick of the smell from the rendering plant? Every time odour is released into our community, West Coast Reduction is in violation of its permit. If you smell the foul odour, call this number and make a difference. [GVRD number provided]". The content of the second poster is similar.

[180] In addition, in a more recent (but undated) local newsletter by the Grandview-Woodland Area Council, the Council states:

> This campaign brings people together to address an old problem: the horrible smell from the West Coast Reduction rendering plant on Commercial Drive at the waterfront. …
>
> The main strategy is to increase the number of complaints to Metro Vancouver. We have been told that Metro Vancouver thinks not many people mind, and that they will not take it more seriously unless they get "thousands of complaints from hundreds of people." So every time you smell it, call the Metro Vancouver complaint line: [telephone number provided].

[181] When questioned about the increase in complaints, Mr. Miller observed generally:

> … its an odour problem that has existed for a long time, and I've been in this business a long time and the tolerance level for odours visible,… not just in this community that we're talking about here, but all over the city, has really gone down in 25 years. People put up with a lot 25 years ago that they will certainly not put up with today. And that's just our changing society.

[182] In the Panel's view, all of these theories have some merit and have likely contributed to the increase in numbers of complaints. However, the socio-economic

and political reasons for complaints are of less importance in this case than the underlying validity or legitimacy of the complaints.

[183] The general aim of the *Environmental Management Act* and the GVRD *Bylaw*, is one of protecting the environment. It is not "stuck" at a certain point in time. With the increases in research and knowledge of environmental issues comes a corresponding public increase in awareness and concern with the quality of the environment. Sometimes that awareness or interest in an issue comes about from campaigns such as the "stop the stink" campaign. Other times, it is as a result of a changing demographic. Regardless, a regulator must be able to respond to these changes and investigate the merits of the environmental concern.

[184] Accordingly, the Panel is less interested in why the numbers have gone up when the technology is at its peak, than it is in whether there is actually some substance to the complaints – something that justifies the unilateral action taken by the District Director in 2007 and 2008. In this regard, of greater interest to the Panel is whether the complaints themselves were erroneously attributed to West Coast's facility, and whether the nature and extent of the complaints provide the District Director with reasonable grounds to believe the amendments were necessary for the protection of the environment.

Analysis of the veracity and reliability of the complaints

[185] The Panel received a selection of almost 300 complaint investigation forms for the years 2006 and 2007. From a review of the forms, it is apparent that the majority of complaints come from people who live to the south-east of the plant, are made primarily within the twelve hour period from noon to midnight, and are made primarily between April and October.

[186] From there, the similarities end. The complainants reside on many different streets, the complaints are made at a variety of times, and they can occur on any given day of the week. The descriptions of the odour also varied. Some are general descriptions such as a "bad smell" or a "pungent, rotten smell". But most are more specific such as a "chlorine smell", "chickeny smell", "burnt feathers", "rotting meat", "cooking catfood", "greasy smell", "rotting fish", and the smell of "dirty diapers".

[187] Some complainants who smell the odours more frequently and strongly express a great deal of anger to the GVRD officer and may be verbally abusive. Some express frustration at the lack of change. Others, especially those new to the area, express some surprise at the odour.

[188] It is apparent from the oral evidence and the documents tendered, that there is no real consistency in terms of when the odour occurs, where it is experienced most intensely or its duration. Interestingly, this is one of the frustrations described; it impedes the ability to plan and organize social events and daily life. This is also one of the reasons the District Director required the weekend and holiday odour management plan in the 2008 amendment.

[189] All of the evidence regarding the nature of the odour indicates that it is unpleasant and/ or offensive. Although some of the Third Parties witnesses may have exaggerated the intensity and frequency of offensive odours, the Panel

generally finds them to be credible witnesses. They were all articulate people who are clearly troubled by their experience with the odour they attribute to West Coast. Their experiences are similar to each other and to the complaints described by Mr. Miller. Their descriptions of odour are also similar in many respects to those found in the 2006 and 2007 complaint investigation forms.

[190] There was no expert evidence regarding the short term or long term impact of intermittent exposure to odour on human health, nor was there any medical evidence linking the health complaints described by the resident witnesses, to the presence of odour. However, there was also no dispute that the witnesses' headaches and/or nausea was a product of either the odour, or the stress caused by the recurrence of the odour.

[191] Regardless of the health impacts it is clear that, at least for the resident witnesses who testified on behalf of the Third Parties, the odour they experience is impacting their way of life. But is the odour they are experiencing from West Coast? This is an issue because the area with the highest concentration of complaints is also where many other odour sources are located. In its report titled "Air Dispersion Modelling of Other Odour Sources near West Coast Reduction", Envirochem states: (

> In both of the Isopleths derived from other sources, the frequent complainers are located right in the middle of the area of highest predicted odour concentrations from the other sources.

[192] This report was provided to the District Director prior to the 2007 amendment.

[193] Despite the numerous odours in the general area such as fish, meat and poultry processors, a sewage pumping station and numerous restaurants that have waste receptacles that will contain decaying fish and meat materials, the Panel accepts that the Third Party witnesses can accurately identify the odour from West Coast's facility. They have lived &/or worked in the area for many years and have investigated the source of the particular odour they smell. The Panel accepts that West Coast does produce an odour that is "unique" and unlike most other industrial odours experienced in the community. However, the evidence is also clear that not everyone in the community can accurately identify the odour.

[194] In 2004, Envirochem analyzed the complaints attributed to West Coast's odour emissions from 2002-2004. It reviewed weather conditions and concluded on page 26 of its report:

> Based on this analysis of the wind direction and the locations where the complaints originate, it appears that WCR [West Coast Reduction] is not likely the source for all of the reported complaints. Other possible odorous sources in the area should be considered as well. The occurrence of complaints submitted even in periods with west, west-southwest and south west winds (i.e., winds that would carry any potential plume from WCR away from the complainants rather than towards them) supports this finding.

[195] Similarly, Mr. Ingram described his personal experience with two complaints, leading to his concern with the veracity of some of the complaints attributed to West Coast.

[196] The Panel also notes that, even without investigating each complaint, the GVRD eliminates a number of complaints simply on the basis of the wind direction and location of the complainant being inconsistent with odour from West Coast. There was ample evidence of this.

[197] Further, even those complaints attributed to West Coast are described as "substantially verified," rather than "confirmed" or "verified". This is not to suggest however, that the GVRD should be doing a site investigation for every complaint. In light of the intermittent nature of the odour, such an investigation would be costly, time consuming and would not produce any conclusive results. This point is only made to illustrate that even when the GVRD counts a complaint against West Coast, there is some residual uncertainty as to whether West Coast is, in fact, the source of the odour.

[198] In the circumstances, the Panel finds that a reasonable person would exercise caution when relying on the complaint numbers alone. First, the numbers may inflate the instances of West Coast's odour in the community (due to errors identifying the source). However, the Panel does acknowledge that the Third Parties' witnesses do not report every odour that they detect.

[199] Of more significance, the numbers create a false impression of the extent of the problem within the community. By this the Panel does not mean that people are not affected. The Panel accepts that there are people who are very much affected. However, the numbers, by themselves, distort the nature or extent of the problem. The numbers alone suggest that West Coast's odours are worse than ever before in West Coast's history. This is clearly not the case.

[200] The evidence before the Panel is that the geographical extent of the odour is far smaller than ever before and that there have been improvements in the past few years. Although the evidence is not consistent in relation to the impact that the second thermal oxidizer had on odour in the community once it was running properly, the Panel accepts the evidence that, at worst, the odour is the same as it was prior to 2006, and, at best, it has improved slightly. The numbers do not reflect this.

[201] Further, the numbers alone do not reflect the fact that those most impacted constitute a small percentage or the people in the potentially affected area. As noted by West Coast, in an area with 22,000 households, only a small proportion of the population appear to be making most of the complaints. This is also evidenced by the relatively low turnouts at the community meetings with 35 at one and 70 at the other. It appears from the evidence that this limited impact on certain households may be explained, in part, by wind and weather patterns.

[202] In its 2006 report, Envirochem states that the "worst case" weather conditions for high ambient odour concentrations in the area of high complaints was "when a gentle on-shore breeze advected stable air towards the region of complaints." It notes that these conditions are most often present in the summer months when the area is subject to large scale high pressure systems that could be

present for days. Envirochem also found that these weather conditions have a high correlation with the odour complaints in the community.

[203] Envirochem's modelling results are consistent with Mr. Miller's observations and experience during his 27 years with the GVRD:

> Q Have you observed any pattern between wind direction and time of year and complaints?
>
> A With regard to West Coast Reduction, we certainly have. It's already been alluded to somewhat. But in this area, the terrain moves upward to the southeast of the plant. So a northwest wind is going to blow any emissions from the plant towards that hillside. Northwest winds are more prevalent in fair or fine weather. In the wintertime, we often get easterlies or southeasterlies which would blow the odours out over the water and they're not affecting anyone to my knowledge.
>
> So when we get into a period of -- or a longer period of fine weather, which quite honestly we haven't had for quite a while in this area, but if we get two or three weeks of sunny weather, we'll often get a land/sea breeze pattern established. Around 10:00 or 11:00 a.m. each morning, the wind will start to blow from the water onto the land, and in that particular area, it tends to be slightly northwest, not due westerly, but more to the northwest, which pushes it directly into the hillside southeast of the plant. That wind will typically prevail most of the day until perhaps 8:00 or nine o'clock in the evening, at which point it either dies down and there's no discernible wind direction, or it starts -- it turns around and blows out towards the water again.
>
> So for people who live in the Grandview-Woodlands area, there's somewhat of a perfect storm that happens in that the very time when they would like to be in their yards and enjoying the outdoors is the most likely time when the wind will come from the northwest, and if there are odours emanating from the plant, they will likely be able to notice them.

[204] The winds blowing to the south or south-east explain why West Coast's witnesses are less likely to experience the odour even though they are closer to the plant than the other witnesses. This effect is clearly shown in the odour isopleth charts that Envirochem created from dispersion modeling in 2004 and 2006. They show the areas likely to be impacted by higher ambient odour concentrations during the worst case weather scenarios. Of note, Mr. Dickson's residence is shown in a high concentration area during maximum 10-minute values predicted for July, whereas the plant itself and West Coast's witnesses are in areas that are predicted to experience lower ambient concentrations. This dispersion modeling provides some explanation for why certain small "pockets" in an area experience odours, while others do not, or do not experience them as intensely.

[205] For those residents who experience intense odours in the night, the evidence of Dr. Katherine Preston, who testified on behalf of the Third Parties, applies. She holds a Ph.D. in atmospheric chemistry from the University of Cambridge, UK, and a M.Sc. in engineering chemistry from Queen's University in Ontario. She is a professional engineer registered in British Columbia and Alberta and is a senior associate of the RWDI AIR Inc. ("RWDI"). Dr. Preston was qualified by the Panel to

give expert evidence in the area of air dispersion modeling, but not as an expert in odour, odour unit modeling or odour management.

[206] Dr. Preston testified that worst case ground level concentrations often occur at night under stable, low wind speed conditions because the concentrations within the plume haven't been diluted by mixing with ambient air. It stays more "focused". When this occurs, the plume can be quite small in terms of area of impact (because of less mixing), but where it goes, the impact is more intense – like a narrow beam of light versus a more diffused, wide beam of light. Also, under low wind speed conditions the winds tend to swirl more so you can get a more concentrated "beam" moving around, which may explain why a high concentration of odour may hit various residences.

[207] There was also evidence that the height of the stacks themselves affect where the odour will be detected; more specifically, as the emissions are discharged from West Coast's stacks, the emissions will tend to travel in the air for some distance before settling close to ground. The tallest stack is 100 feet. This also explains why the witnesses working in close proximity to the plant are less likely to be impacted.

[208] However, neither the winds nor the stack heights provide a full explanation for why one household can account for 48 complaints in one year, but there are no other complaints for over two square blocks.

[209] Besides speculation about sensitivity to odour and/or encouragement to complain in order to provoke action by the GVRD, there is no evidence to explain why some people apparently experience intense and life altering odour quite often, but based on an analysis of the complaints alone, immediate neighbours do not. The location of the highest percentage of complaints and an evaluation of the reason for this, is an important piece in understanding the odour situation and in trying to find a solution. Without a detailed odour study of all of the people in a neighbourhood, neither the GVRD, nor the Panel can really know what is happening.

[210] Another question that arises from the complaint data is that there is no way to track the severity or intensity of the odour complained of. Sometimes this information is recorded on the investigation forms, but without reading each form, there is no easy way to assess, on a daily basis, how bad the odour is from the plant, and where it is experienced most intensely. This information would be of assistance in assessing the problem and finding a solution. As was generally agreed at the hearing, in an urban context, adjacent to an industrial area, there will be a certain amount of odour that is tolerated. The question is how much should be allowed and how often. It is this basic question that underlies the evidence and argument of all of the parties.

Analysis of the 2007 amendment

[211] The 2007 amendment was made 13 months after the 2006 amendment. West Coast submits that this short amount of time in between amendments is, by itself, a reason to find that the 2007 amendment is unreasonable and not necessary for the protection of the environment.

[212] The Panel finds that this fact alone cannot be the basis for a finding of unreasonableness. Many things can happen in a thirteen month period that would warrant a further amendment. The approval of the previous amendment does lead to the question of why it didn't seem to help alleviate the odour issue. Although there was a campaign to complain, people do not normally complain unless they believe they have something to complain about. The only evidence on this point was the speculation by Mr. Miller that the odours still experienced in the community are not the high intensity odours that are treated by the thermal oxidizers.

[213] It is clear that people have different sensitivities to odour and have different tolerances. There was a great deal of expert evidence about this in relation to the use of odour units. There are many unverified complaints before the Panel, as well as Mr. Ingram's evidence that he personally walked the area almost every evening in the summer of 2006, and on the occasional day, in and around the high complaint area, but did not find an identifiable West Coast odour, at least not a strong one. The Panel does not accept that people are making up complaints, but neither can it be said that the odours complained of are all from West Coast.

[214] The Panel finds that there are still some odours from West Coast which, depending on the wind and weather, make their way into the community. Those odours are generally described as "unpleasant" or "offensive". Further, the Panel finds on the evidence that some people's lives are negatively affected by the odour. The resident witnesses who testified for the Third Parties say it is life altering. Others are not impacted at all, or are impacted much less.

[215] The amendment was issued on June 18, 2007. The Panel finds that the complaints primarily relied upon as the basis for this amendment, were those made in the summer of 2006. A draft permit had already been sent out for comment by December of 2006, therefore it was the complaints made prior to that time that gave the District Director his initial grounds for amending the permit.

[216] Reliance on the 2006 complaints is tenuous. During that time, West Coast was still working out the "kinks" after the addition of the second thermal oxidizer. Mr. Miller acknowledged that it is a complicated system and requires a delicate balancing act.

[217] Reliance on the 2006 complaints is also tenuous because they may be fueled by anger at the lack of noticeable change after the installation of the second thermal oxidizer. The evidence before the Panel is that the community, like the GVRD, had expected much greater improvement that summer, and was clearly disappointed with the continued odour. This disappointment and anger was expressed to the District Director at the neighbourhood meeting in October 2006. In order to have a draft amendment out for consultation in December, he must have decided that change was required soon after that October meeting. The Panel believes that this meeting was the initial key motivation for the 2007 amendment. As complaints continued through the year and into 2007, this only solidified the District Director's desire for change.

[218] Further, the complaints received in the summer of 2006, and into 2007, suffer from the various issues identified above. Of particular note is the relatively small proportion of the total potentially impacted households that (a) complain and

(b) experience significant impacts. Based on what the Panel now knows of these complaints, do they provide the reasonable basis, at law, for the amendment?

[219] The power to amend an existing permit on the initiative of the regulator is an important and significant power. However, it is not an unfettered power. The legislators have qualified the power by limiting it to instances where the power is "necessary for the protection of the environment." Thus, it allows the regulator to act quickly and efficiently to amend a permit where there is a risk to the environment.

[220] The District Director states that physical discomfort and unacceptable air quality in the community constituted the "environment" that needed protection. He also states that the amendments would protect the environment by achieving acceptable air quality. However, based on the evidence before the Panel, the 2007 amendment did not, in fact, produce acceptable air quality in the community. Nor did the 2008 amendment. In his closing argument, the District Director states:

> Even after WCR's continuous improvements through 2007 and 2008, the evidence provided by the Residents' and Respondent's witnesses suggests that air quality in the community remains unacceptable. In addition to the direct testimony of witnesses at the hearing, the Respondent advised of evidence provided at public meetings in 2007 and 2008 in which numerous community members expressed outrage and anger about the unacceptable odours in the community. As further evidence of concerns about local air quality, the sheer number of complaints attributed to WCR, by the GVRD, remains far greater than any other single source in Metro Vancouver. Consequently, it was clear in 2007 that it was **necessary for the protection of the environment (i.e. to achieve acceptable air quality in the community) to amend the WCR permit in 2007** and it rActins [sic] clear now that further amendments to the WCR permit are necessary to achieve acceptable air quality in the community." [emphasis in original]

[221] However, according to Mr. Miller, he did not expect that either amendment would produce "acceptable" air quality in the community. Mr. Miller notes that one of the criteria was that West Coast be able to achieve the limits imposed. The amendments were really made for the purpose of information gathering. The information would then be used for further amendments that would incrementally reduce the odour limits to a point where the environment would be protected. Is this in keeping with the intent of section 4.4 of the GVRD *Bylaw* which gives the District Director the authority to amend a permit on his own initiative?

Finding

[222] Given these factors, as well as the issues identified above in relation to simple reliance on the number of complaints, the Panel finds that a reasonable person in the District Director's position would not have found it necessary for the protection of the environment.

[223] The Panel agrees with West Coast that the GVRD's complaint process provides significant room for error. This is of particular import when an amendment is made on the basis of complaint numbers. Further, there is a small portion of the total community making the complaints. In some cases, this may be

sufficient. However, in this case, there is no linkage between the location of the most complaints, and the action taken. There is no understanding of where the impacts are felt the greatest, the reason for those impacts (including sensitivities), why one person complains but a neighbour doesn't or what odours are causing the problems (high or low intensity). To find an effective solution requires an answer to some or all of these questions. Based on the information before the District Director, whether or not the amendments were "necessary for the protection of the environment" could not properly be determined.

[224] Again, this is not to say that complaints alone cannot be the basis for regulatory action. However, in this case, where the company has been operating under a permit for 30 + years, and where the odour has not changed in its nature, and only decreased in its extent of impact, it is not reasonable to rely solely on an increase in numbers of complaints in order to find that an amendment is necessary to protect the environment. This point will be addressed further below.

[225] Finally, the Panel is not satisfied that the District Director had any confidence that the 2007 amendment would protect the environment. The amendment was more likely an attempt to appease or mollify members of the public when he had no other solution to the problem.

Analysis of the 2008 amendment

[226] The basis for the 2008 amendment was continued complaints from the public. The public's frustration, again, may be a result of the lack of improvement to the odour problem after the 2007 amendment. From the evidence of the Third Parties' witnesses, it is apparent that they were frustrated with the lack of real change after that amendment.

[227] For the reasons stated above in response to the 2007 amendment, the Panel finds that the District Director lacked the authority for the 2008 amendment based solely on limited public complaints.

[228] Given the length of time that this issue has been going on and in order to provide further assistance and direction to the parties, the Panel has continued to answer the remaining issues regardless of whether the answer would bring an end to the appeals.

2. Is odour an "air contaminant" that can be specifically regulated in a permit amendment?

[229] The District Director has authority to issue a permit (or make amendments to a permit) allowing the discharge of "air contaminants", and he may place "limits and restrictions on the quantity, frequency and nature of an air contaminant permitted to be discharged." (section 4.1 of the GVRD *Bylaw*).

[230] While there is no dispute that the rendering plant releases air contaminants from its stacks and requires a permit to do so, West Coast questions whether "odour" can be specifically regulated in the permit as it does not meet the definition of "air contaminant".

[231] Odour is not specifically defined as an air contaminant in either the *Environmental Management Act* or the GVRD *Bylaw*, nor have specific numerical

limits been placed on odours within waste discharge permits in British Columbia. This is in contrast with other jurisdictions, such as Ontario and Alberta, where there are specific references to odour. For instance, in Ontario the *Environmental Protection Act*, R.S.O. 1990, c. E.19, defines "contaminant" as "any solid, liquid, gas, odour, heat, sound, vibration, radiation or combination of any of them resulting directly or indirectly from human activities that causes or may cause an adverse effect" [emphasis added].

[232] In Alberta, odour is regulated in section 116 of the *Environmental Protection and Enhancement Act*, RSA 2000, c. E-12, which states in part:

Environmental protection orders re odour

116 (1) Where the Director is of the opinion that a substance or thing is causing or has caused an offensive odour, the Director may issue an environmental protection order to the person responsible for the substance or thing.

(2) Subsection (1) does not apply in respect of an offensive odour that results from an agricultural operation that is carried out in accordance with generally accepted practices for such an operation or in respect of which recommendations under Part 1 of *the Agricultural Operation Practices Act* indicate that the agricultural operation follows a generally accepted agricultural practice.

[233] Such clarity of legislative intent would be of great assistance in British Columbia given the presence of both agricultural operations and industry. Without it, the jurisdiction of the regulators to regulate odour can become the subject of dispute, as in this case.

[234] Mr. Miller testified that the GVRD's traditional way of dealing with odour was including a phrase in permits that no objectionable odour is to pass beyond the plant boundaries, such that the District Director determines that "pollution" has occurred. Pollution is defined in the *Bylaw* and the *Environmental Management Act* as "the presence in the environment of substances or contaminants that substantially alter or impair the usefulness of the environment". This is how odour was regulated in West Coast's permit until the 2007 amendment.

[235] There was also evidence of previous attempts to specifically regulate a chemical or compound that produces odour in West Coast's permit. In the 2006 permit, the GVRD required testing for volatile organic compounds. It wanted to determine whether the odour could be correlated with volatile organic compounds. If so, it might be able to be better controlled in the existing control system, or in the permit. This was not successful.

[236] There was also consideration of hydrogen sulphide and other chemical compounds. However, Mr. Miller noted that "the levels of those compounds are too low to be detected in any great amount and there doesn't appear to be any surrogate that we can use to measure what the odour impact would be. There's just too many different compounds." Mr. Miller advised that this has also been the experience of other jurisdictions. He states:

> … odours are one of the toughest problems to tackle, simply because the human nose is so sensitive to some compounds and when you get a mixture

of them, perhaps hundreds of different ones, it's just -- it's just too hard to try and identify one or two or even just a grouping of them to go after.

[237] All of the evidence at the hearing confirmed that both amendments were initiated solely to address odour from the rendering plant.

[238] The Director notes that the GVRD *Bylaw* (as well as the *Environmental Management* Act) defines "air contaminant" as a substance that is emitted to the air and is capable of causing an impact, such as a material physical discomfort to a person. The full definition in the *Bylaw* is:

[239] "Air Contaminant" means any substance that is emitted into the Air and that

(a) injures or is capable of injuring the health or safety of a Person,

(b) injures or is capable of injuring property or any life form,

(c) interferes or is capable of interfering with visibility,

(d) interferes or is capable of interfering with the normal conduct of business,

(e) causes or is capable of causing material physical discomfort to a Person, or

(f) damages or is capable of damaging the Environment;

[240] The *Bylaw* also addresses the proof required in order to establish that a substance is an air contaminant. It states at section 1.2:

1.2 For the purposes of the definition of an Air Contaminant, it is not necessary to prove:

(a) that the Air Contaminant, if diluted at, or subsequent to, the point of discharge, continues to be capable of harming, injuring or damaging a person, life form, property or the environment, or

(b) the actual presence of a person who, or any life form that is capable of being harmed or injured by the discharge of the Air Contaminant.

[241] The District Director submits that there is evidence before the Board to support a finding that air emissions from West Coast exhibited the properties of air contaminants; for example, that the air emissions from the plant cause or are capable of causing material physical discomfort to people.

[242] The Director is correct that there is evidence by the witnesses of physical discomfort. However, before getting to this part of the definition, the Panel must be satisfied that the thing to be regulated, in this instance odour, constitutes a "*substance*" that is emitted into the air.

[243] The Panel has considered various dictionary definitions of "odour" and finds that odour is not a "substance". For instance, the word "odour" is defined in *The Oxford Shorter English Dictionary* as, "The property of a substance that is perceptible to the sense of smell"; and in *Webster's Third New International Dictionary* as, "A quality of something that effects the senses"; and, finally, in *Webster's Encyclopaedia Dictionary of the English L*anguage as, "the characteristic smell of something".

[244] Further, the evidence of the experts at the hearing is that odour is not a substance. They describe it as a sensation or perception. While there are numerous constituent components that make up an odour, the odour - the smell itself - is interpreted differently by people.

[245] In a previous decision of the Board, *Surrey Langley Environmental Protection Society v. Assistant Air Quality Director*, [1996] B.C.E.A. No. 34 (Q.L.) [*Surrey Langley*], the Board found that odour was not a substance, but went on to find that Money's Mushrooms Ltd.'s composting facility had caused air pollution and confirmed the GVRD's order. The Board found as follows:

> 41 While the definition of pollution contemplates a "thing" – the presence in the environment of substances or contaminants (a contaminant in turn is defined as a substance) – and an odour may not be a thing but rather the effect on the human nose of a "thing", it would be supercilious to suggest that because the focus is on the effect of the thing rather than on the thing itself that hence we are not dealing with pollution.
>
> ...
>
> 43 The recording of odours from the Facility was a method used by the Respondent to determine whether or not the Facility was causing pollution. The human nose is the instrument by which the presence of substances are detected. It is not to be dismissed as an instrument for measuring the presence of "substances". The Panel does not accept the proposition that it is necessary to identify or isolate the existence of particular substances in the environment in order to establish air pollution.

[246] The Panel agrees with the ruling of the Board in the *Surrey Langley* case. Even though an odour is not a substance it is something that is capable of causing air pollution. That is not to say that just because air pollution has been caused by an unidentified substance that it does not exist. In this case, that is what appears to have happened; there is an odour that constitutes air pollution but the source of that pollution is an unidentified substance. The ability of the District Director to regulate that air pollution is constricted by his ability to identify the source. As in *Surrey Langley*, the District Director may use his authority to require that odours be monitored to determine whether they are causing air pollution. This information can then be used to assist in the identification of the substance that is the source of the "air contaminant." Once the source is identified it can specifically be regulated, thus bringing the air pollution to a stop.

[247] Based on the evidence of the resident witnesses, the Panel finds that the odour emitted from West Coast's facility is, at the very least, *capable* of causing material physical discomfort to a person and capable of damaging the environment (where "environment" is defined in the GVRD *Bylaw* to mean "the Air, land, water and all other external conditions or influences under which humans, animals and plants live or are developed), which for the limited purposes of monitoring at this time may be regulated.

3. WHETHER THE AMENDMENTS ARE REASONABLE?

A) Odour Units

[248] West Coast raised two primary arguments in relation to the imposition of odour units in the amendments:

i) Odour units are a "new unit of measure" which requires specific legislative authority prior to imposition in a permit; and

ii) if not, the imposition of odour units in a permit, to be used as an enforcement tool, is unreasonable on the grounds that they lack precision and accuracy.

[249] The District Director submits that the Panel need not address these questions, that its focus should be on whether the limits that he imposed are reasonable. The Panel disagrees. Given that this is a new unit of measure imposed in a permit, this is the first time this matter has been considered by the Board, and the limits can have significant implications for the permittee in terms of enforcement, the Panel is of the view that these are appropriate questions to be addressed in these appeals.

i) Is specific legislative authority required to impose a "new unit of measure" in the permit?

[250] An odour unit is not contained in any British Columbia statute, regulation or protocol. Nor have odour units been adopted in Canada's Weights and Measures Act (incorporated into BC legislation by the B.C. Interpretation Act). The amendments state in Schedule C that the odour sample collection methods and sample analysis are to be consistent with specified U.S. and European criteria, standards, guidelines, and protocols; specifically, the American document ASTM E679-04 "Standard Practice for Determination of Odour and Taste Thresholds by a Forced-Choice Ascending Concentration Series Method of Limits", or the European document, EN 13725:2003 "Air Quality – Determination of Odour Thresholds by Dynamic Dilution Olfactometry."

[251] West Coast argues that in making the 2007 and 2008 permit amendments, the District Director introduced, for the first time in British Columbia, a new unit of measurement and exceeded his jurisdiction in doing so. It argues that the District Director has, in effect, promulgated a new standard of measurement within a permit and adopted international standards and protocols in relation to the measuring and sampling of odour units.

[252] West Coast further submits that subsection 139(5) of the *Environmental Management Act* provides a method for an international or foreign standard to be adopted for use in waste discharge permits. It states:

> (5) A regulation under this Act may adopt by reference, in whole or in part and with any changes considered appropriate by the Lieutenant Governor in Council or the minister, as applicable, a code, standard or rule
>
> (a) set by a provincial, national, international or any other code or standard making body, or
>
> (b) enacted as or under a law of another jurisdiction, including a foreign jurisdiction.
>
> (6) A code, standard or rule referred to in subsection (5) may be adopted as amended from time to time.

[253] West Coast points out that no regulation has been passed that adopts or references odour units as measured by the European, or any international or foreign standard. It submits that the introduction of odour units as a compliance mechanism necessitates careful scrutiny, just the type of scrutiny which would accompany a regulation or guideline or protocol – the type of scrutiny which has not yet occurred.

[254] Similarly, the Minister of Environment's authority in section 5 of the *Environmental Management Act* includes broad powers which arguably include the authority to set a new standard of measure. This section states in part:

> **Minister's authority**
>
> **5** The duties, powers and functions of the minister extend to any matter relating to the management, protection and enhancement of the environment including, but not limited to, the following matters:
>
> ...
>
> (b) development of policies for the management, protection and use of the environment;
>
> ...
>
> (e) preparing and publishing policies, strategies, objectives, guidelines and standards for the protection and management of the environment;
>
> ...

[255] West Coast argues that because the power to introduce a new unit of measurement into British Columbia is reserved to the Lieutenant Governor in Council or the Minister, the District Director cannot exercise this discretion and to do so: it is beyond his jurisdiction.

[256] In support of this latter argument, West Coast refers to *N.F. (Guardian ad litem of) v. Community Living B.C.*, [2006] B.C.J. No. 1331 (S.C.). In that case, the Court stated at paragraph 24:

> 24 It has often been stated that where legislation authorizes a delegate to make regulations then the delegate must make them and any delegation of that statutory authority will be *ultra vires*. In other words, the delegate cannot sub-delegate the law making power without statutory authority to do so. In the case at bar, the Lieutenant Governor has chosen not to promulgate a regulation to create the IQ criterion as a statutory consideration to be applied by the CLBC. Nevertheless, the CLBC appears to have adopted policy which amounts to binding regulation which appears to state that only individuals with an IQ below 70 to 75 will be eligible for the services it provides in accordance with the statutory scheme. ….

[257] At paragraph 28, Chamberlist J. states:

> 28 It is clear that the legislative intent was to expressly leave the important determination of criterion to the cabinet. In this case the CLBC has denied services on the basis of an unlegislated criterion.

[258] The District Director submits that he has the jurisdiction to impose requirements that are "necessary for the protection of the environment." Further, section 4.1(a) of the GVRD *Bylaw* empowers a District Director to "place limits and restrictions on the *quantity, frequency and nature* of an Air Contaminant permitted to be discharged and *the term for which such discharge may occur.*" [emphasis in original]

[259] The District Director points out that there is no requirement under provincial legislation limiting the District Director to parameters and test methodologies specified by the Minister. In fact, he submits that legal limits for parameters and the methodologies to measure specified parameters are, and have been for decades, routinely determined by directors under the *Environmental Management Act* and its predecessor legislation.

[260] The Third Parties submit that odour units do not need to be expressly authorized.

[261] In respect of this issue, the Panel agrees with the District Director. When amending a permit, the District Director can impose any procedure or requirement that he could have if he was issuing a permit at first instance. Section 4.1 of the GVRD *Bylaw* (which is similar to section 14 of the *Environmental Management Act*), sets out those permitting powers as follows:

> [262] … the District Director may in the Permit
>
> (a) place limits and restrictions on the quantity, frequency and nature of an Air Contaminant permitted to be discharged and the term for which such discharge may occur;

(b) require the Permittee to repair, alter, remove, improve or add to Works or to construct new Works and submit plans and specifications for Works specified in the Permit;

(c) require the Permittee to give security in the amount and form and subject to conditions the District Director specifies;

(d) require the Permittee to monitor in the way specified by the District Director an Air Contaminant, the method of handling, treating, transporting, discharging and storing of the Air Contaminant and the places and things that the District Director considers will be affected by the discharge of the Air Contaminant or the handling, treatment, transportation or storage of the Air Contaminant;

(e) require the Permittee to conduct studies, keep records and to report information specified by the District Director in the manner specified by the District Director;

(f) specify procedures or requirements respecting the handling, treatment, transportation, discharge or storage of an Air Contaminant that the Permittee must fulfill.

[263] It is apparent from this section, and the section authorizing permit amendment, that the District Director has been given a great deal of discretion when issuing permits and making amendments. Both the *Act* and the *Bylaw*, allow the District Director to place limits and restrictions on the quantity, frequency and nature of an air contaminant. Such broad powers are important in the context of this legislative scheme as the decision-maker is authorized to permit the discharge of waste into the environment, but must search for ways to ensure that the discharge will still protect the environment.

[264] The Panel finds that the powers in the GVRD *Bylaw*, and the *Act*, are sufficient to allow the District Director to introduce a unit of measurement or standards adopted or established by international or foreign jurisdictions, into a permit amendment, as well as to require the testing and analysis of emissions according to the standards he specifies.

[265] The Panel also finds that this exercise of discretion does not conflict with, nor is it intended to be covered by section 139(5) and (6) of the *Environmental Management Act*. That provision is also found in other legislation, as pointed out by West Coast. It is a type of anticipatory incorporation by reference. Laws must be published and accessible if they are to be applied to citizens. Therefore, there is a requirement that laws be gazetted. When a legal requirement from a foreign jurisdiction is adopted by reference in provincial legislation, the requirement for published and accessible laws is brought into question. This specific authority to allow such incorporation is included in the *Environmental Management Act*, and other enactments, to overcome this problem. It is included in order to allow the legislature to incorporate by reference the standards, codes and so on from another jurisdiction without the requirement of gazetting that code, standard, etc. Further,

that provision is permissive and is not mandatory. It is there for greater certainty but it does not "occupy the field" for the use of codes and standards from other jurisdictions.

[266] In the present case it is a permit at issue, not a regulation. Nor is there an illegal sub delegation in the nature of that addressed by the Court in *N.F. (Guardian Ad Litem of) v. Community Living B.C.* (supra). The District Director's decision is limited to West Coast's permit alone, and is not a general policy amounting to a binding regulation. Thus, the Panel finds that neither a regulation nor bylaw is required.

[267] In addition, the Panel notes that the permit amendments define odour units and specify how the odour samples are to be taken and analyzed: the provisions are neither vague nor uncertain in that regard. This is not to say that West Coast's concerns with odour units as an enforcement tool, and with the amount of scrutiny that has gone into the adoption of odour units, are irrelevant or moot. Rather, these concerns belong with an analysis of whether the exercise of the District Director's discretion to include odour units in the amendments is reasonable. The Panel will turn to this matter next.

ii) Is the imposition of odour units in West Coast's permit, to be used as an enforcement tool, reasonable?

The evidence

[268] To understand the debate over the use of odour units in West Coast's permit, the Panel received extensive evidence on how an emission is sampled and its odour analyzed for the purposes of calculating the odour units. The Panel has summarized this evidence below. This evidence is not in dispute.

[269] West Coast hired Envirochem to perform the sampling required by the amendments. Mr. Ingram testified that Envirochem obtains samples once a month from the discharge stacks. It takes the samples on days when the facility is operating in the 90th percentile of the previous three months. Envirochem arranges for the samples to be sent to Pinchin Environmental Ltd. ("Pinchin"), the company that operates an odour laboratory in Ontario.

[270] The Panel received the results from the odour sampling in 2007 and 2008, and the odour sampling reports prepared by Envirochem. The reports described the sampling process and attached the results from Pinchin.

[271] From a review of the reports and the testimony at the hearing, it is apparent that the sampling procedure itself is quite involved. Duplicate samples are collected from the five stacks specified in the amendments. This is normally done in one day. The methodology is as follows.

[272] Ten litre Tedlar™ bags, provided by Pinchin, are used to collect the samples. An electric and a hand pump, along with clean ¼ inch Teflon™ tubing, is used to draw the sampled air from an emission source to the bag. The bags are first "purged" by filling and emptying the bags with air three times before taking a sample to ensure the sampling system (bags and tubing) equalize and eliminate any residual bag odour. This purging takes place in the sampling lung, by switching

the flow direction, to minimize the contamination of the bags. Clean tubing is used for each source to avoid cross-contamination.

[273] The bags look like large cubes when filled. The sample bag is placed in a sealed container (the odour sampling lung) which has the capacity of taking duplicate samples.

[274] Duplicate (sometimes triplicate) samples are collected from the five sources at West Coast's plant and a blank sample is taken for quality control purposes. Background samples are collected from a location one block upwind and west of West Coast, and also at a location east of West Coast.

[275] Each sample is sealed, identified and labeled.

[276] Collected samples are placed temporarily in a dark container in an operators' room. After completion, all samples are shipped by overnight courier to Pinchin's odour laboratory to be analyzed. The cost associated with the current sampling method is approximately $15,000 each month.

[277] A great deal of technical evidence was presented on the analysis and calculation of odour units. For the purposes of these appeals, the Panel will focus on the laboratory process used by Pinchin to analyze West Coast's samples.

[278] The amendments allow either of two standards to be used for odour sampling, testing and analysis: the European Standard, EN 13725:2003 (also referred to as the British Standard), and the American Standard, ASTM E679-04. Although odour testing is not a commonly accepted practice in British Columbia, in a number of other jurisdictions, Europe in particular, significant thought and study has gone into the issue of odour measurement as is evidenced by the European Standard itself. It is a 70 page document created for the purpose of "providing a common basis for evaluation of odour emissions in the member states of the European Union." It specifies a method for "the objective determination of the odour concentration of a gaseous sample using dynamic olfactometry with human assessors …." The unit of measurement is the European odour unit per cubic metre (OU_E/m^3).

[279] Countries in the European Union as well as Australia and New Zealand have adopted this, or almost identical standards. In addition, the European Standard is commonly followed in those American cities and states that perform odour testing, or that order odour testing to be conducted, as well as in a number of research facilities in Canada.

[280] The ASTM document was created by ASTM International, an organization with its head office in the United States that develops voluntary standards.

[281] These standards are generally used in laboratory odour testing in many jurisdictions.

[282] The procedures set out in these two standards for collecting and analyzing odour samples (i.e., the use of human panels), are similar. The European Standard is the most comprehensive document, was applied to West Coast's samples, and was the standard referenced most often in the evidence.

[283] Pinchin performs its odour testing in an odour-free room constructed in its odour evaluation laboratory located in Mississauga, Ontario, close to Pearson International Airport. An odour sample is placed in a device called a Triangular Forced-Choice, Ascending Concentration, Dynamic Dilution Olfactometer (the "olfactometer").

[284] According to the European Standard, there is no technology available to detect odour that is better than the human nose. Thus, human assessors are used to analyze odour samples.

[285] An olfactometer presents three air samples to a group of eight trained odour assessors, known as the odour panel: one of the samples will have the odorous air mixed with clean air; the other two samples contain odour free air (blanks). [The qualifications and screening of panelists is critical to the odour testing process, and will be discussed in further detail later in this decision.]

[286] To begin the testing process, the odorous air sample is diluted with clean air to a point where the human nose would not detect any odour (sub-detection). The three samples (one odoured, two blanks) are then individually presented to the human panelists who are asked to "sniff" the samples presented by the olfactometer and identify which of the three samples is different. They are not asked to identify a smell, but are forced to choose one that may be different by pressing one of three buttons on the olfactometer: "G" for guess when the panelist can't distinguish between any of the presentations; "D" for detect when the panelist believes he or she is detecting a difference between one sample and the other two; or "R" for recognize, when the panelist can identify and describe some element of this odour (e.g., the person can put some kind of descriptor on the odour such as sweet, sour, bitter etc.). This is the "forced choice aspect" of the procedure.

[287] When the panelists have made their choices, the concentration of odour in the odorous sample is then doubled and re-presented to each of the panelists along with the two blank samples. The panelists again are forced to make a choice as to which one is the different sample by choosing the "G", "D" or "R" button.

[288] The panelists can sniff the three presentations as many times as they want before making their choice. The goal each time is to pick the one that is different. The process continues with the concentration of odorous air increasing until each panelist correctly detects the odour in at least two consecutive presentations. This means when each panelists has two correct detects, or a correct detect and recognize, or two correct recognizes, whichever comes first. This is then considered the "odour detection threshold" for that panellist.

[289] This analysis is conducted "blind", meaning that neither the panelist nor the test administrator knows which port on the olfactometer delivers the odour sample.

[290] Pinchin states that the "detection threshold" reported is the dilution ratio at which 50% of the panellists correctly detected the odour. This represents the amount of dilution required for the odour to be just detectable. Pinchin states, "Since DT [detection threshold] values are dimensionless, pseudo-dimensions of odour units per unit volume (i.e. odour units per cubic metre (ou/m^3)) are often used for reporting purposes."

[291] To determine the odour units for a particular sample, a number of calculations are performed, first to get the geometric mean for each individual, and then to get the geometric mean of the entire panel. The odour panel's average detection threshold is the reported "odour concentration", or "odour unit" value of the sample. Some protocols require the removal of the outliers prior to calculation of the panel average. Thus, an odour unit is a dilution ratio that relates to the odour concentration.

[292] As noted above, since the results are only as good as are the panellist's olfactory senses, the qualifications and training of the human panelists is important to understand.

[293] An odour panel is not designed to represent the olfactory abilities of the population at large. The European Standard states that one of the objectives in the selection process is to obtain sensors whose olfactory responses are more sensitive than the general population, and whose olfactory responses are as constant as possible.

[294] To achieve this aim, assessors with a specific sensitivity to the reference odorant n-butanol, one of the 3 butanol alcohols, are selected to be panel members. The underlying concept, at least for the European Standard, is that there is some relationship between people sensitive to the chemical odorant n-butanol in low concentrations, and a sensitivity to other odorants. N-butanol is used as a reference because it is considered a neutral odorant with regard to pleasure or displeasure; that is, pleasantness or unpleasantness, except in high concentrations. It is also commonly or readily available and is safe to inhale.

[295] As part of their selection criteria, a potential panelist is presented with n-butanol at a set dilution. If the person can detect it, he/she qualifies as a panellist. The detection level has to come within a range of between 20 and 80 parts per billion. These people are considered the most sensitive in terms of population.

[296] The European Standard sets out how an assessor is to be tested, how often and how consistent the results must be. If a panel member does not comply with the selection parameters (in relation to the reference odorant and consistency) he/she is excluded from all further measurements until compliance is established again.

[297] Pinchin states that each of the eight trained assessors they use is first screened for accuracy and repeatability following the procedures outlined above.

The evidence in dispute

[298] The evidence in dispute relates not to the process used to measure odour units, but in relation to whether the outcome, the odour unit measure (OU/m^3 or OU/s), is a reliable and accurate measure of the odour.

[299] The Panel heard from two expert witnesses: Dr. David Parker, Ph.D. and Mr. Charles McGinley. Dr. Parker was called by West Coast; Mr. McGinley was called by the Third Parties.

[300] Dr. Parker is a professor of environmental science and engineering at West Texas A&M University and holds a doctorate in biological systems engineering. He

has an extensive background in matters relating to industrial water and air pollution and, in particular, with the control and measurement of odour. Dr. Parker was qualified to give expert evidence at the hearing in the area of odour and odour units and the statistical analysis thereof.

[301] Dr. Parker provided an expert opinion report dated April 7, 2008. In his report, he opined on the question, "whether odour units are an accurate measurement of odour emitted from a rendering facility such as to be capable of being a reliable compliance mechanism". His evidence at the hearing was mainly in relation to that report.

[302] Dr. Parker described the concept of an odour unit, what they are, how they are derived and what they represent. Much of Dr. Parker's evidence was technical, and the Panel will summarize only those portions relating to West Coast's allegations in relation to the uncertainty of odour units being used for enforcement purposes in the amendments.

[303] Dr. Parker explained that the reason people have turned to odour units relates to the problem of identifying and measuring "smell". He states that odour emanates from something with mass and dimensions; it is the consequence of chemical compounds in the air. One of the reasons for odour's elusiveness is that there may be 200 or more components which, individually, could be measured, but no one has found a way to predict what those 200 compounds are going to smell like to the human nose. The components mix and create a sensation that is perceived by the human nose. Thus, odour can be described as a sensation or perception.

[304] Dr. Parker notes that very small amounts of a vapour of certain ingredients in the air will produce an odour. In his opinion, odour can only be measured by complicated means, and even then, the measurement has a subjective element.

[305] Odour levels are sometimes referred to in terms of odour units, but, according to Dr. Parker, this is not a precise measurement. He states in his report:

> It is important to note that odour units have no dimensions, they are simply a dilution ratio that relates to the odour concentration. It is also important to note that odour units are strictly based on the ratio of clean odour-free air to odour sample air, and have nothing to do with the character of the odour or what it smells like. Given two samples, one of 12 odour units and another of 96 odour units, then the sample with 96 odour units is said to have a higher odour concentration than the one with 12 odour units.
>
> Even though odour units are dimensionless, scientists sometimes assign the units of 'odour units per cubic metre' (OU/m^3) when reporting odour concentration. This arbitrary selection of units is used to assign a mass (i.e., a weight) to a dimensionless quantity that has no actual mass, something entirely arbitrary and not based on solid scientific principles. Nevertheless, odour units (OU) and odour units per cubic metre (OU/m^3) are still used by many scientists and engineers. (pp. 4-5)

[306] In his view, odour units are an attempt not to be subjective, but are, in fact, subjective. They are an attempt to take a subjective measurement and turn it into

something that has dimensions, something like hydrogen sulphide that can be measured in parts per million or milligrams per cubic metre. However, odour units are simply a dilution ratio. They are compiled from the subjective assessment of a particular human panel - of people sniffing.

[307] In his opinion, odour units are neither an accurate nor precise measurement mechanism.

[308] Considering odour units, Dr. Parker's concerns with accuracy come from the lack of a clear measure, a standard or "true value", which can be used to compare with the results obtained. He uses an archery example. For the archer, the true value is the bull's eye and it is the basis upon which all other marks are compared. For sodium chloride, standards can be prepared of known concentration and compared to measured values. However, for odour units Dr. Parker states that there is "no clear measure as to the true odour unit value because the response to the sensor (the nose) varies among humans." This is even recognized in the European Standard which states: "As a true value for odour measurement as such is not available, an accepted reference value for a reference odorant has been defined in this standard." That reference standard is n-butanol.

[309] Based on his experience in running a laboratory, Dr. Parker is of the view that the use of n-butanol as the European Standard's reference odorant is "fundamentally flawed". Based on his research, it is not a good odorant to be using to select panelists or to be correlating those units into something that might be mass-based. At best, Dr. Parker has found only a poor correlation between being sensitive to n-butanol and being sensitive to other environmental odours. He referred to graphs in his report (standard curves) which show poor, or even no correlation, in relation to feed lot research. He advised the Panel that he bases this conclusion on hundreds of these sorts of graphs. From his research, he concludes in his report:

> It is my opinion based on this data that odour units as presently measured by olfactometry laboratories do not have an accurate calibration method (n-butanol), and therefore the odour unit values obtained from such a fundamentally flawed method are of unknown and variable accuracy. (p. 10)

[310] Dr. Parker also identified the Tedlar™ bags as creating more uncertainty in the results. He states that the bags themselves have odours. In the research process, they discovered this when trying to collect ambient samples downwind of a feed yard in a plastic bag. Sometimes they would get higher numbers upwind than downwind. In this process, they discovered that the bags themselves emit a solvent. In the bag making process, a solvent is used and isn't completely gone when it goes to market. The bags have a background odour of up to 90 odour units, not all the time, but on occasion.

[311] In relation to precision, Dr. Parker concludes that odour units as presently measured are imprecise and subject to extreme variability. He describes precision as a measure of repeatability (e.g., three arrows hitting the target but not the bulls eye is precise, but not accurate). He states that you can be precise without being accurate, but accuracy requires precision.

[312] From Dr. Parker's experience with odour testing and his research, he has found five main areas of imprecision (variability):

- variability between laboratories when measuring identical samples (up to 300%);
- variability between different odour panels in a single laboratory when measuring duplicate samples (22-50%);
- variability within the same odour panel when measuring duplicate samples (11-77%);
- variability amongst panelists within a single odour panel (up to 600%); and
- variability in individual panelists over time, as measured on n-butanol (up to 700%).

[313] He states that, from his research, the largest variation is usually among odour panelists, where variation up to 600-700% can be found.

[314] He concludes in his report that:

> Because odour units are neither accurate nor precise, it is my opinion that odour units are not an accurate measurement of odour emitted from a rendering facility such as to be capable of being a reliable compliance mechanism.
>
> A further limitation in the use of odour units as a reliable compliance mechanism is that laboratory odour units and field odour units are often used interchangeably without any acknowledgement that they are not the same. (p. 14)

[315] Charles McGinley, P.E., gave evidence on behalf of the Third Parties. He is a registered professional engineer in Minnesota. Mr. McGinley's background is in odour research and development of a field olfactometer (the Nasal Ranger), and he has previous compliance and enforcement experience with a U.S. government agency. Mr. McGinley is self employed and his environmental health engineering firm fabricates and sells both odour laboratory olfactometers and field olfactometers. Mr. McGinley was qualified as an expert in the measurement of odour and in the field of olfactometry.

[316] Mr. McGinley provided an expert opinion report dated April 21, 2008 and testified at the hearing. Mr. McGinley's report is a one-page letter responding to Dr. Parker's expert report, with two research papers attached: "Precision of Olfactometry and Odor Testing Results", a paper he co-authored and presented at the joint international conference on odours on 9-12 April 2006; and "Assessment of the Science & Technology of Odor Assessment", that was prepared on December 30, 2005 by one of Mr. McGinley's companies (St. Croix Sensory Inc.) for the Iowa Department of Natural Resources.

[317] Mr. McGinley states in his report that Dr. Parker's opinions are "somewhat obsolete"; they do not represent the substance, purpose and intent of the European Standard. He states that Dr. Parker's statements also reflect "a negative position to the advancement of the science and technology of odour measurement." He

states that the scientific community accepts olfactometry as a precise testing method as is evidenced by the number of jurisdictions which have adopted it. He also clarifies that precision, as with any test, is dependent on the quality assurance and quality control statistics associated with the laboratory results. He states that the European Standard provides a proper formalized method for monitoring the performance of panel members (assessors) and the test results.

[318] In his oral testimony, Mr. McGinley expanded upon his comments.

[319] In relation to accuracy, there is a statement in the first paper referred to above that "accuracy of olfactometry results cannot be determined with environmental odour samples since the true or correct value is not known." Mr. McGinley states however, that this same statement is also true of some parameters measured by a laboratory of other environmental samples such a biological oxygen demand (BOD). He notes that the environmental parameter of BOD is in some ways similar to the environmental parameter of odour. When a waste water sample is collected, there is no knowledge and no way to have a true value of that result. You do the sample analysis and you take the result at face value. Yet BOD analysis is common in environmental contexts.

[320] Mr. McGinley also takes issue with the description of odour measurement being subjective. He states,

> … subjectivity is applied to opinion. If someone has an opinion, it is subjective. If someone is making a selection, a judgment and it's within a context of a well-defined procedure and the results are statistically processed, it's defined as objective.

[321] He provided a similar definition for "precise". By "precise", he means within the parameters of the European Standard. Thus, even though one of his papers showed that the same sample was measured at 571 OU/m^3 and 1751 OU/m^3, a threefold increase, he explains that this variability fits within the definition of precise because it is within the European Standard's acceptable standard deviation of 0.172.

[322] Mr. McGinley explains that each assessor has "one big circle of variability" around him. Included within that circle is the variability for n-butanol, and another variability for the odorant. With a number of panellists, there are a number of different circles of variability. Mr. McGinley states that it is an "overall measured variability, an accepted variability of an assessor according to the standard". Therefore, the ultimate odour unit number calculated is "going to be a precise number according to the standard - there is no exact value."

[323] Mr. McGinley also advised that he reviewed Schedule F of the permit amendments. He agrees that the permit incorporates standard practices and that the odour limits could be used as "compliance determining criteria" with confidence.

[324] Regarding Dr. Parker's concerns with n-butanol and accuracy, Mr. McGinley points out that the European Standard does not say there is a direct correlation between sensitivity to n-butanol and sensitivity to environmental odours. He says that n-butanol is used to certify an assessor to ensure the panelist's results are repeatable and reliable. He points out that n-butanol has been used successfully in

various countries as a basis for measuring odour for a variety of reasons, including compliance.

[325] With respect to Dr. Parker's feedlot research and the lack of correlation between the feedlot odour units and the n-butanol odour units, Mr. McGinley called Dr. Parker's analysis "peculiar". He points out that 20-25% of the panelists would have been eliminated based on their n-butanol scores under the European Standard.

[326] Mr. McGinley acknowledges that there is variability within laboratories, within panels, and between different panels. However, in his view, the European Standard allows certain variability and as long as it comes within the European Standard's allowable deviations, it is considered precise.

[327] Mr. McGinley was also asked about Dr. Parker's concerns with Tedlar™ bags. He states that these bags comply with the European Standard. However, his company cautions people using Tedlar™ bags that have not been pre-treated that the results are not necessarily representative of the real odour that is present in the ambient air for samples of low odour (100-200 OUs).

Analysis

[328] There is no dispute that there are a range of consequences that may result from a permittee's failure to comply with a permit requirement including prosecution for violating the terms of the permit or for causing pollution. The maximum fine for such an offence is $1,000,000 under the GVRD *Bylaw*.

[329] The decision to adopt a new unit of measurement, particularly when there are significant consequences for failure to comply, must be undertaken after careful consideration of the strengths and weaknesses of the measure.

[330] Although odour units are recognized as standards of the ASTM and the European Committee for Standardization, and, as such, have undergone professional assessment, the Panel does not believe that this fact alone is of sufficient weight to justify its inclusion in a permit to measure compliance. Rather, the Panel must carefully consider whether odour units, used in the context of measuring odour from a rendering plant – an environmental odour, is reasonable and appropriate.

[331] Based on the evidence presented, the Panel finds that the use of odour units in this context is not reasonable and appropriate. The notion that odour units can be used as an indicator of an environmental "smell" is simply too flawed to be used as a method of determining compliance, and is therefore not suitable for determining whether the environment is adequately protected.

[332] To begin with, an odour unit is a dilution ratio. The mathematical definition of "ratio" is dimensionless. Therefore, to give an odour unit a "unit of measure", is already predisposing it to a "mass", which it is not, and is therefore arbitrary.

[333] Further, the dilution ratio is equal to the volume of clean air divided by the volume of diluted air (or the diluted odour). In order to attribute a "measure" of odour units to a sample of air, human panelists are used. The Panel appreciates that this is considered the best, and possibly the only, means of measuring smell.

However, the basis upon which the panellists are chosen, the use of n-butanol, is not without its problems, particularly when it comes to the correlation between sensitivity to n-butanol and to environmental odours.

[334] The European Standard is based on an assumption that the performance characteristics as determined on reference materials are transferable to other odorants. Specifically, that there is a linear relationship between a person's sensitivity to n-butanol and to other odours. If the person can detect between 20-80 parts per billion, they qualify to be a panellist. The response obtained to 40 parts per billion in n-butanol is the standard upon which other odorants are referenced.

[335] The Panel finds that there is no credible support for this assumption in the context of the environmental odours at issue in this case. For this, the Panel relies upon Dr. Parker's evidence.

[336] Dr. Parker also testified that, even when looking at data that comes from a laboratory that's been certified to meet the European Standard, it is not uncommon for the person most sensitive to n-butanol to be the least sensitive to the other environmental odorants and vice versa (i.e., the person that is the most sensitive to the environmental odorant to be the least sensitive to n-butanol.

[337] The Panel also notes that, at the hearing, Dr. Parker plotted the Pinchin data from a July 11, 2007 sample from West Coast. This was done to determine what kind of correction would result between the eight panellists' sensitivity to n-butanol and to the odour sample. Six of the panelists had the same n-butanol number, which he says is a really good panel, and their scores met the European Standard. Although the six people scored the same for n-butanol, he showed that their variability with the environmental odour was "all over the place", ranging from 373 to 1,493. He testified that this is consistent with his findings with findings for feed lot odours. It confirms his opinion that there is a poor correlation between sensitivity to n-butanol and to environmental odours. The Panel agrees.

[338] In addition, the Panel does not believe that there is an issue of whether a single or an average was taken to estimate the fitness of the data, given that the correlation between n-butanol, as a supposed reference odorant, and an environmental odour is tenuous at best. One can account for variability with averages but there is still variability. Odour units are based on a subjective assumption; building on this assumption just increases the bias.

[339] The Panel finds on the evidence that bias and subjectivity are present at many stages during the capture and analysis process:

1) In order to assess accuracy of analysis one needs to compare the result with a standard, a true value. In olfactometry, human panellists are used in place of analytical instruments. The difficulty in assessing the accuracy of the odour unit is that there is no clear measure as to the *true* odour unit value because the response to the sensor (i.e., the nose) varies among humans. Thus, bias and subjectivity is introduced at this point.

2) Odour units may be derived from the laboratory and from the field. Many times the values obtained from these two different methods are used interchangeably, which is erroneous. Bias is again introduced at this point.

3) The human panel process does not account for the possibility of residual odour in a panellist's nose after completing multiple rounds with several presentations. Bias can be introduced at this point.

4) The Tedlar™ bags used for the samples emit odour powder plus solvent. The solvent is emitted from the bag and could interfere with the measurement as well. Background odour from a bag is a problem if measured levels are so low which causes interference with lab analyses. Thus, another bias is introduced.

[340] In addition, the Panel accepts the evidence of Dr. Parker that there are at least 5 areas in the testing and reporting where variability enters into the results:

1. Variability between labs when measuring samples (up to 300%);
2. Variability between different odour panels in a single lab when measuring duplicate samples;
3. Variability within the same odour panel when measuring duplicate samples (11-77%);
4. Variability amongst panellists within a single odour panel (up to 500%); and
5. Variability in individual panellists over time (up to 700%).

[341] The District Director points out that variability is not unusual in environmental testing, and that odour testing may, in fact, be more precise than test methods for other contaminants that are commonly used for compliance determination such as coliform counts.

[342] Mr. McGinley's view is also that some variability is to be expected and provided that it is within the parameters set by the European Standard, the results are precise.

[343] The Panel is of the view that such variability is not acceptable when the results are used for compliance purposes. The Panel notes that Mr. McGinley agreed that the difference in results from the same odour sample tested by two laboratories could be four-fold, and that this could still be considered precise if it is within the standard deviation allowed by the European Standard.

[344] Although the Panel finds Mr. McGinley knowledgeable about odour testing and standards, as well as his products, it prefers the evidence of Dr. Parker's opinion in relation to the accuracy and precision of odour unit testing. As a researcher, he comes with a more independent point of view than Mr. McGinley who works for a company that sells olfactometers. In addition, Dr. Parker has more experience with odour panels and the actual testing and results produced through this testing. Although the District Director has challenged Dr. Parker's conclusions as being flawed, the Panel found him to be highly qualified in this area and gives significant weight to his opinions and conclusions.

[345] Given that there are many steps in the process of attempting to calculate odour units which are problematic, and which contain so many points of bias and subjectivity, the Panel finds that the ultimate number or value coming out of an odour unit measurement cannot be relied upon as meaningful, particularly for the purposes of evaluating compliance with a mandatory term of a permit.

[346] At the hearing, the District Director produced a permit issued by the Ministry of Environment in Ontario to Maple Leaf Foods Inc. in which odour units are used to measure performance. He also refers to the Netherlands Environmental Regulations (section 2.9.3).

[347] While the actions of other jurisdictions may be an indicator of reasonableness, the Panel has had the benefit of two experts on this matter. It finds on the evidence that, regardless of the decisions of other jurisdictions, including odour units for enforcement purposes in West Coast's permit is not reasonable. Although not qualified to give expert evidence on odour units, the Panel also notes that, in Dr. Preston's experience, odour units as a regulatory compliance tool are not in general use in North America, and that many jurisdictions ambient odour criteria are used for system design purposes, as opposed to compliance.

[348] The Panel appreciates the dilemma which the GVRD and, in particular, the District Director faces. With the many complaints about odour, and no clear measure as to the true odour unit value, it leaves the District Director in an extremely difficult position. While the Panel does not disagree that something ought to be done to improve the current situation, this is simply not a fair and reasonable means of doing so. Having said that, the Panel notes that West Coast has agreed to the use of odour units for information purposes, which may assist the GVRD in crafting a long term solution.

[349] In conclusion, the Panel finds that to impose such an imprecise measurement in the permits, which have significant sanctions for non-compliance, is an unreasonable exercise of discretion, and the terms are unenforceable as a result.

B) Curtailing operations on weekends and statutory holidays during the warmest months

[350] One of the 2008 amendments requires a written report, by March 21, 2008, detailing a plan for managing odours on weekends and statutory holiday that (Schedule C):

a. when implemented, should provide assured odour-free periods of time on weekends and statutory holidays from the beginning of May to the end of September; and

b. includes detailed explanations as to why certain mitigative actions, including curtailment of production or delayed receipt of raw materials, may be impractical to implement in some circumstances.

[351] In discussing the odour problem with residents over the years, Mr. Miller testified that one consistent message was that some kind of dependable relief, especially on weekends, would be very welcome.

[352] This requirement was put into the amendment after consultations with West Coast. The draft amendment had proposed curtailment of activities at the plant on the weekend. West Coast opposed weekend curtailment and provided good reasons for this. Mr. Miller and the District Director testified that this new requirement was the alternative suggested by West Coast.

[353] As noted earlier, the District Director advised the Panel that this provision should be modified as it was not his intent to ensure "assured odour-free periods"; rather, it should say something to the effect of "assured periods of substantially reduced discharge of odorous emissions that may adversely affect the community".

[354] West Coast submitted the required plan to the District Director on March 26, 2008. The plan is two pages. It states under the heading "Context":

> The nature of animal by-products recycled at WCR requires that they be processed as soon as possible. This raw material does not have the same characteristics as meat. Meat is muscle tissues. The waste products from animal slaughter are bones, fat, viscera, etc. The materials are very unstable, and contain compounds that break down proteins. These raw materials begin to degrade within minutes of slaughter. Greater Vancouver generates millions of pounds of this material each week. These volumes cannot, as a practical matter, be stored even with refrigeration. Nonetheless, weekend and holiday volumes can often be lower than that occurring during weekday production. On those weekends and holidays when levels are more manageable, refrigeration may assist in allowing some flexibility in processing time.

[355] The plan then described its plans for a trial or experiment to try to refrigerate some of its product to enable it to reduce operating hours on the weekend by potentially shutting down the processing on some of its lines (on some products), that it would normally render earlier. Mr. Ingram advised that the company has already adjusted some production scheduling to try to avoid summer evenings.

[356] The trial involves the application of refrigeration to a small raw material receiving pit. Mr. Ingram gave evidence regarding the company's testing of such systems, one of which was on Vancouver Island. Mr. Ingram testified that the company's hope is to hold some raw material in these refrigeration pits at the end of each weekly production cycle (Saturdays), thereby allowing West Coast to shut its processes down earlier on Saturday. At the time of the hearing, the company was in the process of ordering some equipment and it hoped to have some of that equipment in operation in the near future. However, Mr. Ingram explained that there will still be some experimentation and trials conducted to determine how best to cool a mass of raw material like that. He also said that this can only be done with pork and poultry operations because once the fish season begins, it is a 24 hour per day, seven days a week operation and there is no end of the cycle between May and September.

[357] Mr. Ingram also explained that there are limitations on the volume of raw material that he thinks they will be able to cool, mostly because it comes to the plant in large quantities. Although the temperature of the material may not be high, there is a lot of heat in a mass. Because things typically cool down first along

the surface, a mass of raw material that is all in one spot makes it difficult to cool – there's little surface area in proportion to its mass. Therefore, Mr. Ingram says that, if they can cool the raw materials down, it will be on some limited volume of raw material at the end of a cycle, rather than on the 70-100 thousand pounds of raw material that may be in one place at one time during the week.

[358] Mr. Ingram notes that one suggestion has been for the suppliers to hold onto their materials for longer periods of time, e.g., over the weekend. However, due to issues with the quality of materials, space issues and the Canadian Food Inspection Agencies' requirements for continuous disposal of animal by-products, they cannot keep it over the weekend. Mr. Ingram notes that for some large operations, products are removed every hour; for others, it is daily. It depends on the volumes produced. The *Meat Inspection Act* limits how long these materials can be left on site.

[359] Another limitation is the amount of space available at West Coast's facility. West Coast brings in 1.6 to 2 million pounds of raw material daily, which takes up a lot of space. Even if they could cool it, Mr. Ingram advised that there is really nowhere to store it.

[360] Although it has been suggested that producers may landfill these materials, Mr. Ingram does not believe that is a good alternative for environmental reasons.

[361] Another option suggested was to replace the older and less efficient scrubbers with thermal oxidizers. However, Mr. Ingram advised that to maintain negative pressure in the buildings requires the movement of a great deal of air. To treat as much air as the packed tower scrubbers do, the company would need 18 to 20 thermal oxidizers. Since a single thermal oxidizer is approximately 15 feet by 50 feet by 40 feet high, he said that the existing facility is too small, and this would be far too expensive. To make the scrubbers more effective, Mr. Ingram advised that they are currently investigating ozone as a replacement for the bleach system.

[362] Also at the hearing, the possibility of moving the plant was posed to Mr. Ingram. He said that it has taken 44 years to develop the infrastructure at the current location and that it would likely cost in the range of $200 million to move. One of the reasons for the current location is its proximity to meat packers and fish processors, some of which are in the area, and the facility's proximity to the waterfront from which they ship tallow and other products.

[363] West Coast has also considered other odour control technology such as a biofilter, which it uses at its Nanaimo fish mill. However, Mr. Ingram advised that it would take a biofilter approximately 100 feet by 250 feet in order to treat the same amount of air that West Coast's packed tower scrubbers treat, an amount of space that is not available at the Vancouver facility. In his view, the thermal oxidizers are more efficient than biolfilters in any event.

[364] In its plan, West Coast advises generally that, contrary to the assumption that curtailing or shutting down operations on weekends and statutory holidays would be "protecting the environment" by reducing the odour, it may well have the opposite effect: it could exacerbate odour and undermine sustainability. West Coast submits that this may be the result because, to the extent that curtailment backs up the materials to be recycled at the source, odours will also increase at

those sources. In addition, curtailment may also necessitate the introduction of landfilling of raw poultry, pork and fish waste.

[365] In its final argument, West Coast also submits that the requirement is uncertain as to what "odour free" means and how that determination is to be made. It argues that the requirement is invalid on that basis alone: *Barthropp et al. v. Corporation of District of West Vancouver and Field* (1979), 17 B.C.L.R. 202 (B.C.S.C.).

[366] In its plan, West Coast concludes by stating:

> While odour management and continuous improvement have been and will remain a primary goal of WCR, for the reasons set out above, WCR cannot disrupt recycling of waste products so that no odour is "assured" during designated periods on weekends and holidays in summer months.
>
> WCR will continue to work towards further voluntary odour management measures and may submit further on this issue.

Analysis

[367] For most of the resident witnesses who testified, the impact of the odours is most egregious on those occasions when they are outside, i.e., weekends, evenings and holidays. It is apparent that the District Director tried to find some balance – by reducing odours on weekends and holidays. While the Panel finds that it is reasonable and appropriate to ask West Coast to investigate options that would reduce odour on weekends and statutory holidays, whether by curtailing operations or weekend closures, it accepts the evidence of Mr. Ingram that complete closure and/or curtailment of all operations, including fish, is not a feasible option given the nature of the raw material that they are dealing with.

[368] The District Director has clarified that he did not intend these consequences; he did not intend "odour free periods". Rather, he wants West Coast to come up with a plan for "assured periods of substantially reduced discharge of odorous emissions that may adversely affect the community", and asks that the requirement be revised to reflect this.

[369] Mr. Ingram advised that the company will be testing refrigeration and other options in response to the community's comments. He states:

> We are trying to see what we can do, because obviously when it comes right down to it, the issues here – the ultimate issues with these complaints are between us and our neighbours. So if that's something we can do, and we really don't know that yet, then we'd like to try. It just is – it's, I guess, us reaching to try and find something we can do and if that's – if that's an idea that will work, maybe it can help, if nothing else, demonstrate some faith and maybe try and build some trust.

[370] The Panel finds the revised requirement is a matter that the District Director and West Coast should continue to investigate.

4. Whether the rendering plant's importance to the environment and to agriculture in British Columbia is a relevant consideration in a permit amendment decision.

[371] In *Oakwood Development Ltd. v. St. Francois Xavier*, [1985] S.C.J. No. 49, the Court considered whether a municipal council exercised its discretion "according to law" and in accordance with proper principles reflected in the "policy and objects of the [governing] Act". The Court states at paragraph 15:

> As Rand J. said in *Roncarelli v. Duplessis*, [1959] S.C.R. 121, at p. 140, any discretionary administrative decision must "be based upon a weighing of considerations pertinent to the object of the administration". For the reasons already given I am of the view that the Council was entitled to take the flooding problem into consideration. The issue does not, however, end there. As Lord Denning pointed out in *Baldwin & Francis Ltd. v. Patents Appeal Tribunal*, [1959] A.C. 663, at p. 693, the failure of an administrative decision-maker to take into account a highly relevant consideration is just as erroneous as the improper importation of an extraneous consideration. ….
>
> …
>
> The respondent municipality, therefore, must be seen not only to have restricted its gaze to factors within its statutory mandate but must also be seen to have turned its mind to all the factors relevant to the proper fulfilment of its statutory decision-making function. [emphasis added]

[372] All parties to these appeals agree that West Coast's facility performs an important function in the management and recycling of waste created by the production of food. It is the only major rendering facility left in British Columbia and, without it, producers might turn to less desirable methods for disposing of their animal waste such as landfilling or on-farm burial. These methods produce greenhouse gas, methane and the potential for groundwater pollution.

[373] The facility also provides an important service to meat producers in the province, as the continuous disposal of animal by-products is required by the Canadian Food Inspection Agency.

[374] Another important aspect of the symbiotic relationship between West Coast and fish and meat packers and processors is economic. Mr. Ingram testified that West Coast charges a custom rendering fee to its suppliers of raw materials. Those same suppliers get back the proceeds from the sales of the meal to the feed producers. This is part of what keeps meat processors in the province competitive. Mr. Ingram notes that many meat packers have moved to other provinces. If the cost of removing their by-products were higher, that would hurt their competitiveness.

[375] West Coast submits that the District Director failed to take into account the essential role of West Coast in maintaining a sustainable food supply for British Columbia when he made his decisions. Conversely, the District Director states that he did take into consideration the public value of the operation, but this was balanced against air quality rights.

[376] Does the District Director need to balance the need and type of amendments with the role of the operation in the BC sustainability regime?

[377] The Panel finds that this is a relevant and appropriate consideration. The Panel also finds that the District Director did take this into account when he made his decisions. This is evident from the fact that the limits imposed in the amendments were ones believed to be "achievable by West Coast." The Panel also finds that, despite the immense pressure by the community for real change in odour levels, the GVRD was not prepared to make drastic changes to the company's operation, in part, based on this consideration.

[378] The tension in this case is not new. The Panel notes comments of Stanfield J., who was grappling with these issues in a sentencing case which also involved a rendering plant. In (*R. v. McLeod's By-Products (1978) Ltd.*, [2003] B.C.J. No. 695, he notes:

> 10. There is in this proceeding, however, a story of more general application which I believe deserves to be recognized.
>
> 11 As context, reference may be made to oral reasons for sentence that I gave May 26, 1997, when dealing with an earlier prosecution of this same company. Referring to page 1, lines 13 to 28, I said the following:
>
> > The *Waste Management Act* [now *Environmental Management Act*] creates a number of regulatory offences for which there are significant penalties to and including fines of a million dollars. The legislation reflects, I believe, a broad public concern that members of the community act responsibly to ensure that the fragile environment in the province is preserved. There is always a tension between the industry on the one hand which is valuable to the community in providing employment and products for the well being of the community and on the other hand the preservation of the environment upon which the public is similarly dependent. There can as well frequently be, as there appears to have been in this case, tensions between the immediate products of industry -- here, odour looms large in that area -- and the desire of the community to live in an environment which is free from pollutants of various kinds.
>
> 12 We live in a society which generates many, many different by-products of industry and domestic life which collectively we refer to as waste. Some of that waste is potentially toxic; most of it is potentially harmful to the environment. All of that waste needs to be disposed of in a manner which is least harmful to the environment.
>
> 13 Frequently, there are relatively few facilities for such disposal and a correspondingly high demand for such services when they do exist. Somewhat ironically, however, in my own experience both as counsel in environmental matters years ago and more recently in the last decade as a judge, it seems that companies who carry on businesses in the disposal of society's waste often cannot demand terribly high prices for their services, and their businesses struggle. Sometimes those economic pressures strain their commitment to maintaining clean and permit-compliant facilities.

> Additionally, such waste disposal operations often are viewed with real disfavour by persons whose personal homes are in close geographic proximity.
>
> 14 … Thus, important commercial operations for the benefit of society come into tension with the very reasonable desire of homeowners to have their home exist in a clean and natural-smelling environment.

[379] These comments apply equally to the situation in this case.

[380] From the evidence tendered by the GVRD, the Panel finds that the District Director's took into account the value of the company's service, and that this is appropriate in the circumstances.

CONCLUSION

[381] Conflicts between the interests of the public and industry are becoming more and more common, especially in relation to air quality and odour in particular.

[382] It is clear that West Coast's odour is a problem for many people in the community. For some people, it creates a very unsatisfactory and unhealthy living environment. There is a very high level of frustration and dissatisfaction with the efforts of the GVRD. People simply just want this to end and feel they have no realistic hope of that happening, despite sympathetic and hopeful comments from the GVRD.

[383] The GVRD is in a difficult position. It has the responsibility to regulate air emissions, but also sees the bigger environmental picture and appreciates the importance of the company's role. Further, the plant has been there longer than many of these residents and has been working to improve its odour control technology and make efforts to change. The GVRD is walking a tightrope. This decision of the Board does not solve the problems for any of the parties.

[384] The Board is a creature of statute and must decide an appeal on the basis of the issues raised by the appellants, and decide the questions of law and fact that arise. It is not a Board of inquiry or a body that can solve the problems between parties that have taken years to create. In cases such as this, there are no easy solutions.

[385] However, in order to find a solution, one must first understand the problem. In this case it is not as simple as saying, "the problem is the smell". Nor is it realistic to say that the problem is the location of the plant. This plant is located in a well established industrial area. Neither the regulator nor this Board is going to order it to move or shut down.

[386] So, how can change be affected? This requires an objective analysis of the options available. Measuring odour via odour units, as acknowledged by the District Director and Mr. Miller, is only a measuring tool. It is not the mechanism for change. Mr. Ingram testified that West Coast does not object to odour units as an information tool, but does object to using them as a compliance limit in a permit. Despite the cost of approximately $15,000 a month to sample, he stated that West Coast would be willing to continue sampling to try to build a larger

database if that would be of assistance to the parties – to perform sampling and reporting emission data and odour units as a reporting mechanism – as opposed to a compliance mechanism.

[387] It is true that there are odours from West Coast's plant, but there have also been improvements. The current difficulty is that, although one would have expected the second thermal oxidizer to improve the level of odour in the community, if one goes by complaint data alone, the inverse happened. The situation appears worse.

[388] The way towards a real solution to this problem will be to put the company's limited financial resources towards a more effective solution. This would also require the assistance of the residents and the GVRD. The current situation is not working for any of the parties. Despite the resident witnesses' skepticism, the Panel was very impressed by Mr. Ingram's dedication and his level of concern. He attended every day of the hearing and listened to the evidence of the resident witnesses. He carefully described West Coast's efforts to address odour but, unfortunately, the Third Parties were not in attendance to hear this evidence. At various times Mr. Ingram advised that West Coast would like to be included in the meetings to discuss the odour issue.

[389] The Third Parties should build upon that and try to assist the company in trying to find solutions.

DECISIONS

[390] The Panel has considered all the submissions and arguments made whether or not they have been specifically referenced herein.

[391] Section 103 of the *Act* gives the Board the power to confirm, reverse or vary the decision under appeal, send the matter back to the person who made the decision, or make any decision the person whose decision is appealed could have made, and that the Board considers appropriate in the circumstances.

[392] For the reasons provided above, the Panel finds as follows:

[393] The appeals of the 2007 and 2008 permit amendments are allowed. The amendments were imposed by the District Director without authority or jurisdiction to do so. The amendments are hereby rescinded and the decisions to impose those amendments are reversed.

[394] Based on the evidence presented during the hearing, the Panel also makes the following recommendations:

1. The Panel recommends that the parties pursue West Coast's proposal for a technological "round table" involving the community, the GVRD and West Coast. West Coast would pay for a facilitator and the facilitator would be chosen by the consensus of all of the parties. The objective would be to build trust between the community and West Coast and to reach achievable solutions to the odour issue.
2. The Panel recommends that West Coast continue to investigate the addition of cold storage to reduce odour.

3. The Panel recommends that West Coast stand by its commitment to continue to provide emission samples for odour testing and use of odour units for information and monitoring purposes. This may assist the GVRD in crafting a long term solution.

"Alan Andison"

Alan Andison, Chair
Environmental Appeal Board

"Monica Danon-Schaffer"

Monica Danon-Schaffer, Member
Environmental Appeal Board

"Robert Wickett"

Robert Wickett, Member
Environmental Appeal Board

March 8, 2010